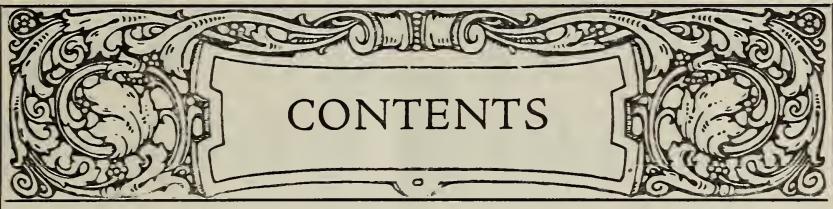


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THE FRED W. MUTH CO.
PEARL & WALNUT STS. CINCINNATI, OHIO

GLEANINGS IN BEE CULTURE

DECEMBER, 1918

EDITORIAL

IN VIEW of the orders to all publishers, emanating from the War Industries Board, to economize on the use of paper in all possible ways, we do not bind the index for this year's volume in the last number of the year, as usual in the past. Many of our readers do not preserve complete volumes of Gleanings, and so do not require the annual index. To those who desire this index, we shall be glad to furnish it on receipt of a line from them requesting us to do so.

BEEKEEPERS who have need of more bees next spring will do well to put in their orders early with well-established concerns. The experience of last year showed that some beekeepers bought heavily of new concerns that were unable to fill orders and did not always act along the lines of good business principles and strict honesty. The old reliable houses will inform customers when their limit for filling orders has been reached and will return any money that may have been sent when they see their capacity for filling is exceeded. We suggest the advisability, when dealing with new and untried concerns, of placing the money in a bank or in the hands of a third party, with instructions to pay it to the shipper as soon as notified by the customer that the order has been satisfactorily filled.

FOR THE aluminum comb manufactured by the MacDonald Artificial Honey-Comb Co., several important advantages are claimed. Among these are ease of sterilizing in case of disease, elimination of drone brood and of moths, impossibility of melting down in hot weather, or of breaking when extracting. We, accordingly, desired to try out some of this metal comb during the season just past, but were unable to obtain any until so late that we do not feel justified in giving a complete report at present. At first, we had some doubt as to whether the bees would fill in the numerous holes at the bases of the cells. When A. I. Root was asked his opinion, he said: "Better put it up to the bees." Accordingly, we did so and found they soon overcame that objection.

In straightening out the bent edges of cells that had been accidentally jammed, however, they were not equally successful. We have reports from several beekeepers to the effect that this aluminum comb has been accepted by the bees both for storing honey and brood-rearing, and, in their opinion, is a success. Next summer, after trying out this new invention thoroly, we shall be pleased to make a definite report, hoping in the meantime that beekeeping may have scored another advance. But until we have thoroly tried out this new comb, made of material so entirely unlike that of the natural comb and so unyielding to any manipulation by the bees themselves, we wish to reserve judgment.

THE GREAT WAR, the like of which never was and never will be again, has been

brought to a close; or at least we may say that the awful business of killing has been suspended.

With the end of hostilities there are new problems and momentous possibilities before us. The beekeepers of the country during the past four years of awful slaughter have arisen to the occasion. Their sons have gone across and over the top. They have helped to relieve congestion of the sugar shortage not a little. Almost to a man the great mass of beekeepers went into the production of extracted honey; for by so doing they could nearly double the amount of honey. Many were equipped for the production of comb honey only, and the change to extracted meant a large investment of money as well as a change in methods.

If ever any industry speeded up it was the business of producing honey. Colonies were made enormously strong, and tiered up until they were head-high.

The demand for bees in package form was beyond all precedent; for the slogan was, "Bees, more bees, and then more bees." Some of the largest commercial producers discovered that when they changed over from comb to extracted they could handle very nearly double the number of colonies with the same amount of help. Following the suggestion of Gleanings, many producers bought up bees in their surrounding vicini-

ties—bees that would have done little or nothing for their own owners, and put them in the class of honey money-makers—the class that would help relieve a starving world.

The severity of last winter took a fearful toll of bee life. It is probable that the winter of a year ago in the Eastern States was the severest ever known. Fortunately the commercial producers had fortified themselves and were ready for the emergency. But in spite of all their painstaking care the mortality was greater than for many years previous.

The season, however, opened up with the brightest of honey-price prospects and honey flow. Then came the demand for bees in package form. So great was the call that practically all the package men of the South were oversold.

So much for the past. What of the future? Will the demand for honey keep up as heretofore? Will it go to Europe by the shipload? Will the wholesale and retail grocers buy it by the carload? Will the price go higher or come down? Will the prospects of a normal or mild winter (on the theory that two severe winters seldom or never follow consecutively), will the fine prospects of clover, that have been abundant everywhere this fall all over the Eastern States, and will the possibility that prices on all food stuffs may sag, cause the price of honey to sag the coming year?

In seeking an answer to these questions, it may be well to review the course of last year's honey markets. When prices shot up on extracted honey from 12 and 13 cents in July and August to 20 and 22 cents in carlots f. o. b. New York in December and January, the question was raised, "Would these prices go down or up in 1918 with the prospects of a bumper crop in sight?" The prediction last year in big buying circles, and especially among the brokers who were looking for a chance to make a scoop, was that there would be a sag. But there was no sag. Prices began to climb. When they got up to 16 cents buyers began to say (and most of them were honest in the belief) that the price could not hold up. When the price went up to 18 cents they were staggered. When the figures began to move around 20 cents it seemed inevitable as fate that they would slump. In the mean time there were rumors of boatloads of honey going to Europe—of how the boys on the other side were paying \$1.60 for a pound bottle of American honey. Prices continued to go up, but seemed to become more stationary at 20 to 22½ cents a few weeks ago.

So it will be seen that all prophecies concerning the honey market last year failed and may again.

Now that the war is over, will honey prices drop or stay high?

Here are some facts that might lead to the conclusion that prices will drop: While it is figured that it will take two years to bring the boys back to America, the very

process of bringing them back may release thousands of tons of shipping space for carrying food stuffs from America to Europe to feed not only the allies but the people of the central powers against whom we have been waging war. Already the Food Administration at Washington has issued a statement to the effect that the release of shipping space will have a tendency to increase the quantity of sugar and coffee in this country. This is doubtless true, considering the large quantities of sugar held in both the East and West Indies. With the importation of a large amount of sugar the price of honey would naturally fall. Even at present there are indications of a more plentiful domestic supply of sugar, for the authorities at Washington now make it possible for each person to have four instead of two pounds of sugar monthly. The possibility and probability that the hundreds of thousands of tons of sugar in the West Indies will soon be released may have the effect of increasing the amount of sugar per capita still more. It was the sugar shortage that stimulated an enormous domestic call for honey, and this shortage may soon begin to be relieved.

Now, on the other hand, there are factors warranting the belief that the price of honey will continue high.

The sugar refineries of Europe in the areas devastated by war have been destroyed. Thousands of acres that were formerly devoted to growing beets for sugar have been turned over to the growing of grains. The result is that Europe has almost no sugar in sight.

The process of demobilization will be comparatively slow. The internal troubles that the European powers are encountering will require an enormous policing, taking millions of men to restore and maintain order. These men who would otherwise be producers in Europe will have to be fed. Then, moreover, there will be the millions of people homeless and landless who will have to have food. It is evident, therefore, that it will tax all the resources of both Americas to feed these people, and food supply and food conditions are likely to remain much the same as during the last several years.

Mr. Hoover has said, since the armistice with Germany was signed, that he did not expect any great slump in the price of food—not for a year at least. He even thinks that the demand will be even greater, because the central powers will have to be fed as well as our allies.

Now, balancing all these factors in the food market situation, it is our honest opinion that honey has about reached its peak in price, our chief belief for saying this being the likelihood of an increasing supply of sugar both in America and Europe. But we are not expecting an immediate slump. What prices will be twelve months hence no one can foretell; but the probabilities are that prices of all foods will change gradually with a tendency downward.

HERE are numerous instances all over the United States where the combination of producing honey and raising fruit is conducted on a large scale. I have already told you about C. J. Baldridge, Kendal, N. Y., a man who is making a success of operating extensive bee-yards and fruit-growing ranches together. Experience seems to show that the conflict between the two lines of industry is negligible, and that, in order to grow fruit, at least a few bees are necessary if not a vital factor in the business. In most cases the pollination of blossoms is the main object. In other cases honey is the primary object, while the growing of fruit is merely secondary. In still other instances we find cases where the two lines of industry are operated at their utmost, the same labor and brains taking care of the two lines of business.

Seventy-Acre Orchard and 300 Colonies.

In the last-mentioned class we have a very fine example in the case of Adams & Myers, at Ransomville, N. Y. The firm operates a 70-acre orchard, mainly peaches, in the very prime of their productiveness. They also run 300 13-frame colonies; and such colonies as they are! Mr. Adams and Mr. Myers, with the help of one or two men, do all the work; and it is their statement that the lines of industry do not conflict as they operate. The spraying and pruning come mainly at a time when the bees require little or no attention.

Big 13-frame Hives for Fruit Growers.

If their bees were in 8-frame hives, Adams & Myers said the bees might require considerable spring management; but, fortunately for them, the hives are all 13-frame. The colonies are so populous and so well provided with stores, mainly natural stores, in the fall, that very little spring management is required, except in the matter of unpacking. The big hive is certainly the proper thing for the fruit-grower or any other man who is operating some other line of business, and who wishes to work on the let-alone plan at certain seasons of the year.

Figs. 1 and 2 show the kind of hives and colonies these men believe in; and, if the old proverb about the proof of the pudding means anything, they are not far wrong in the selection of a hive adapted to the circumstances of the fruit-grower.

During winter weather, shut in to a greater or less extent, Adams & Myers make their own hive equipment, operating a buzz saw with the same engine that operates the extractor. Few men are mechanics enough to make their own stuff. But one member of this firm knows how to make a close fit. It is the senior member, Mr. Myers, shown in Fig. 1.

One would think that these two men

WHEN TO USE THE BIG HIVE

Its Points of Advantage for the Fruit Grower or Others who Keep Bees but Cannot Give All Their Time to Them

By E. R. Root

would be so busy in their fruit-growing operations that they would not have any time to give any attention to their bees. I spent two or three days at

their place watching them in their work. If I know anything about fruit-growing (and I think I do), and if I know anything about beekeeping, nothing in their line of business is neglected. Their crops of honey and the carloads of fruit that they produce show that these men, in the parlance of the street, are "onto their job."

Big Hives Not Back-Breakers.

I said to Mr. Myers, "I do not see how you lift those great 13-frame hives."

"They are a great deal handier," he replied, "in my opinion, than 8-frame hives

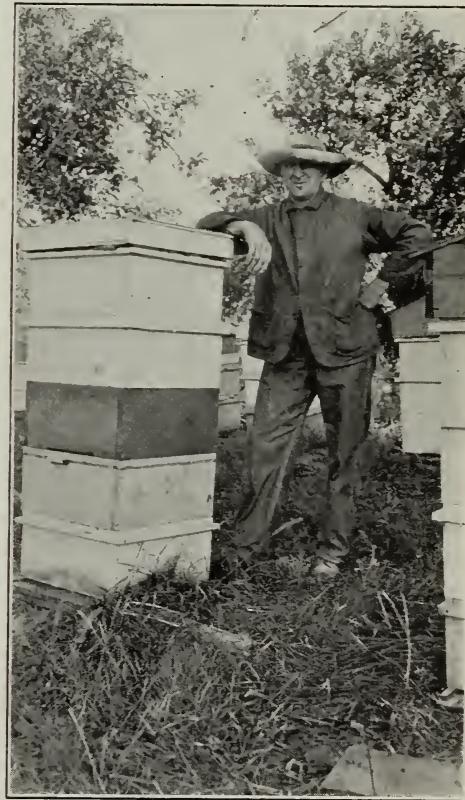


Fig. 1.—This is taken from the apiary of Adams and Myers, near Niagara Falls, N. Y. These men are extensive fruit-growers as well as beekeepers. Mr. Myers is shown just back of one of his colonies that are not uncommon. The hives shown are 13-frame Langstroth, or an aggregate of 65-frames capacity, which, when translated into 8-frame supers, would make a colony eight stories high and one frame to spare.

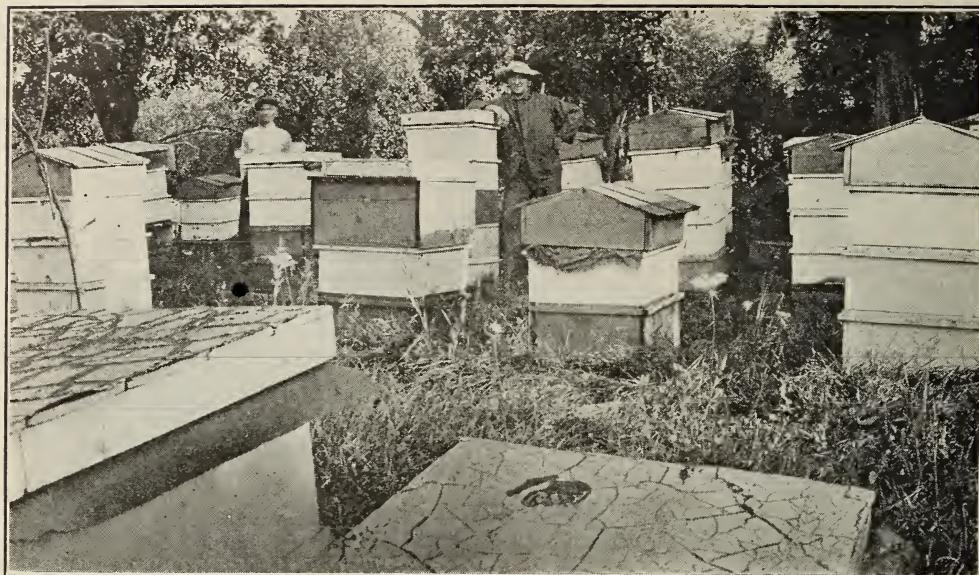


Fig. 2.—The home apiary of Adams & Myers, extensive fruit-growers near Niagara Falls, N. Y. Mr. Adams is shown on the left and Mr. Myers on the right. They believe in windbreaks as will be seen at the background facing north. They believe in packing and 13-frame colonies that will not swarm. They are prosperous business men. The methods that these men employ in operating the bee and fruit ranch could be copied to advantage by others.

of an equivalent capacity tiered away above my head. I can lift a heavy load along about the height of my chest or waist, when half of that load might be considerable of a strain if it were above my head."

I watched these men at work. It was evident that by their management they do not "break their backs" any more than the beekeepers with hives of 8- and 10-frame capacity. The secret of it is that the individual unit, while heavier, can be lifted to better advantage because it is never above the chest line. I became convinced that the statement that "a 10-frame hive is all that a man can lift" is not true. I also became convinced that the 13-frame hive is better than a 12-frame one because it is exactly square. There are some queens that go a little beyond 12 frames, but seldom beyond 13.

Advantages of a Square Hive.

Another advantage of having a hive square (13-frame) is that the cover and bottom will always fit, no matter how placed; and if one believes that frames crosswise of the entrance are better than frames lengthwise, he can have his choice. As a matter of fact, he can run them lengthwise during the summer and crosswise during the winter.

Little or No Swarming Trouble.

I asked Mr. Myers whether he was troubled much with swarming.

"Very little," he replied. "We have tried enough of the 8- and 10-frame hives to know that we could not use them. The fact that we can have powerful colonies—

colonies that will rarely swarm—decided us in favor of a 13-frame hive. With such hives we can give the bees attention at our convenience. We are not compelled to drop everything and run."

Easy to Prepare for Winter.

There is a further advantage in the big hive; and that is that the brood-nest can be contracted to eight or nine frames, and the space on each side can be filled with packing for winter. In the spring it is very easy to reduce or remove the packing and add additional combs.

If I were a fruit-grower, I am frank to say to our readers that I would adopt either the 13-frame hive or the long-idea hive with 30 or more frames. I would make the long or coffin-like hive so that I could put on upper stories of ordinary 10-frame hives whenever the needs of the colony called for 30 frames. In this connection I wish to say that the modern commercial beekeeper, running for extracted honey, who does not contemplate colonies that will pretty nearly fill a barn, is losing the chance of his life to make money if he is in a good locality.

Inside the Honey-House.

Let us now look into the beehouse where Adams & Myers do their extracting. We find a modern 8-frame power-driven reversible extractor, capping-melter, buzz-saw table, tools, and all other appliances that good mechanics and practical men know how to utilize. We shall find something more, and that is shown in Figs. 3 and 4. You will hardly be able to understand what all this outfit means till it is explained. Listen.

Adams & Myers have a trade that calls for honey in bulk in the liquid form. While they sell honey by the carload, they also sell it in 1- and 5-gallon cans. This retail trade wants its honey in bulk, but it wants it so it will pour; so they devised the apparatus shown in Figs. 3 and 4. The honey is pumped from the bottom of the extractor into the galvanized washtub shown at the top of the pictures. The pipe line is shown in Fig. 4. The honey runs from the tub into what is virtually a large Peterson capping-melter. This is an oblong pan with a double bottom filled with water. A Standard Oil kerosene stove beneath keeps the water hot in the pan above. The honey runs from the galvanized tub; and as it runs along the bottom of the pan it is heated. While hot it readily runs thru the strainer of cheese-cloth tied over the top of the galvanized can which in the picture shows right next to the carpenter's handsaw. The hot honey readily runs into a large receiving-tank whence it is drawn off into five-gallon cans and sealed.

This apparatus is about as near perfection as anything I have ever seen. The honey from Adams & Myers goes to their customers in liquid form, and it stays that way. Their local and retail trade has learned to use honey in bulk.

Making Nuclei from Bees Collecting in the Honey House.

In nearly every extracting-house, after the combs have been extracted for a day or two there will be an accumulation of bees in some corner of the building, usually near the window or screen. Adams & Myers employ a scheme of putting a nucleus with two or three frames of brood near this bunch of bees. Very shortly the bees will go in and occupy the combs. When the nucleus is full, it is removed and another one put in its place. In this way no bees are lost.

Fig. 5 shows a corner of Adams & Myers' extracting-room, and at the upper right-hand corner near the top is a nucleus covered with a piece of burlap. This was the first time I ever saw this scheme worked out. Other beekeepers let their bees starve, as

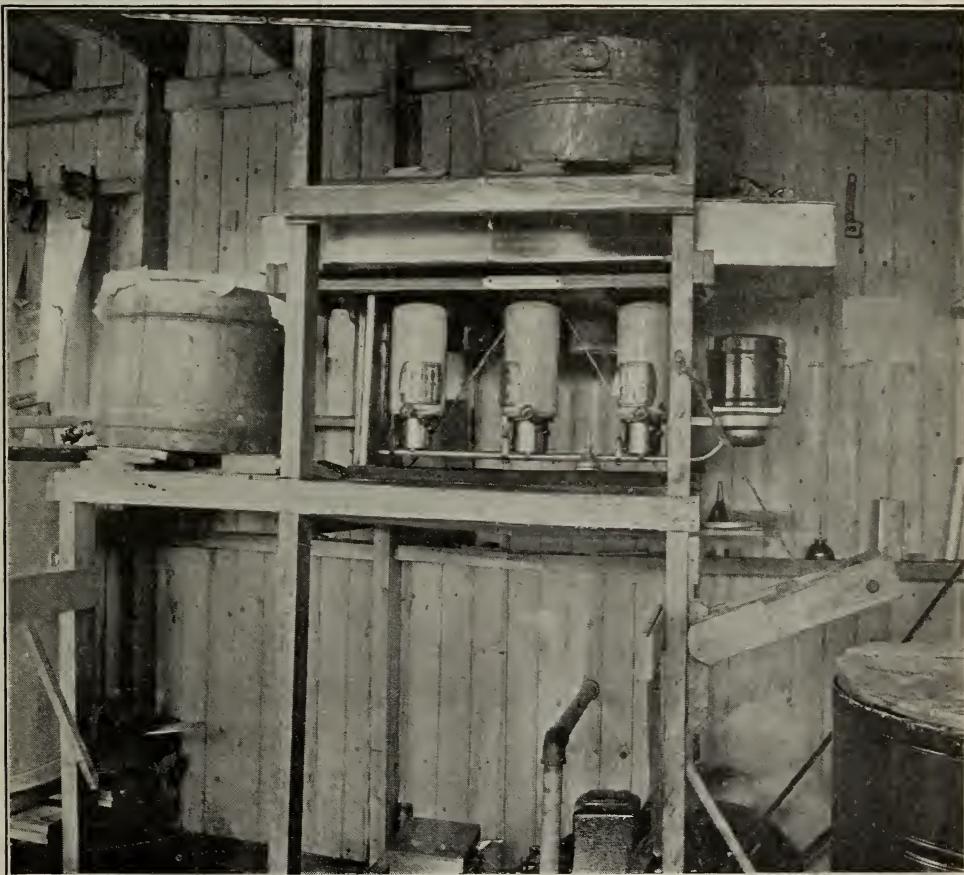


Fig. 3.—This picture should be studied in connection with Fig. 4. The honey is pumped from the extractor into the washtub above; passes into a double-bottom water pan beneath, the water being kept hot by means of a Standard Oil kerosene stove just beneath the pan. The honey is heated as it passes over this double bottom, strained as it runs thru the tank at the left, and finally runs into a large receiving-tank below.

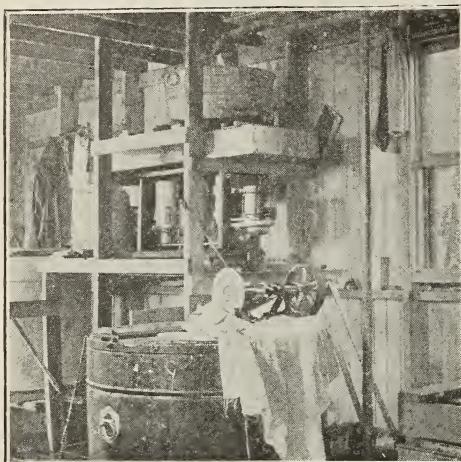


Fig. 4.—Another view of the honey-processing room of Adams & Myers, showing the power plan and extractor.

they say they are not worth saving. I doubt it.

I introduce Adams & Myers at this time because there are many beekeepers "on the fence" as to the style and size of hive they should use. During the winter months beekeepers will need to be making their plans as to what they are going to do. If they want to know my opinion I would say that if they are in some other line of business, such as farming or fruit-growing, they will not go far wrong if they adopt a 12- or 13-frame hive; and I have yet to meet a practical honey-producer who will deny that such a hive is an advantage. If it did not "cost

so like fury," many of them would change over. Then there is a large class who fear that they could not lift such big hives. If you could see Adams & Myers at work, you would discover that it is more a matter of brains than of muscle. The right use of a wheelbarrow at the right time and place, suitable runways to and from the honey-house, and a knowledge of how to "get the advantage of a burden," will overcome to a great extent the problem of lifting.

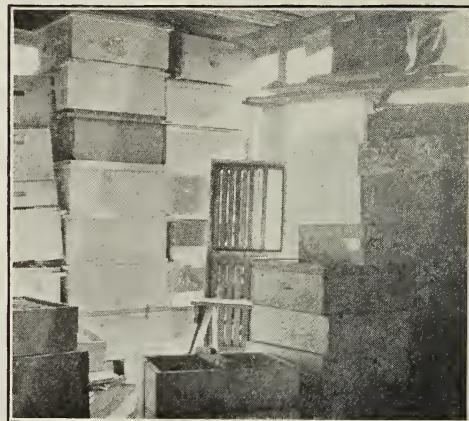


Fig. 5.—The point of interest in this picture is the little three-frame nucleus next to a screened window, at the upper right-hand corner of Adams & Myers' extracting-house. The bees, as they are brought into the extracting-house, gradually accumulate at the top of the window. A little nucleus containing three frames of brood is placed near this bunch of bees. They gradually work down into this nucleus, after which it is put out into the yard and given a queen-cell or a queen.

WHEN we built our new bee-cellar, we expected to realize some of our dreams of perfect wintering, for this cellar was built so deep into the ground and protected above so well that its temperature was affected but little by the fluctuations of the temperature outside. In addition to this, a mammoth ventilator of the Bingham type was installed and equipped with a regulating device, by means of which it was not difficult to hold the temperature at 45 degrees, which at that time was considered the proper temperature for bee-cellars throughout the winter.

The bees did winter well in this cellar, if we use the ordinary definition of good wintering. The colonies that were given granulated sugar syrup for winter stores showed

WITHIN THE BEE CELLAR

*No Hard and Fast Rules Concerning Temperature and Ventilation.
Vary According to Behavior of Bees*

By Belva M. Demuth

about as near perfect wintering as we have ever seen; but, as a means of wintering colonies on natural stores as they average year after year with

us, this elaborate and expensive cellar was a disappointment. To go into the cellar during December or January and note the feeling of warmth on entering and then observe the masses of motionless and apparently contented bees hanging comfortably below the combs, was enough to make one regret having left half of the colonies outside to weather the blizzards of the cruel northern winter. To go in again, the latter part of February and March, and note the greatly increased death rate, as testified to by the number of dead bees to be swept up, and the restlessness of many of the colonies win-

tering on natural stores, sometimes caused a feeling of guilt.

Different Behavior of Colonies Wintered on Honey.

I do not mean that our natural stores were unfit for cellar wintering, but they were not good enough for perfect results at 45 degrees. In other words, the colonies using natural stores were the best indicators as to the character of the wintering. They were more sensitive in their response, and the results were greatly magnified when compared with those wintered on sugar syrup. We were not willing to quit wintering a part of the colonies each year on natural stores, hoping ultimately to find some way to winter perfectly on such stores.

By weighing the hives and contents when the bees were put into the cellar and again when they were taken out, we found that those colonies having only natural stores invariably used a greater quantity than those using sugar syrup. In some cases the amount of natural stores consumed per colony was fully twice that of colonies of equal strength using only sugar stores. In some cases colonies in the cellar that were given rather poor stores apparently consumed during the winter fully as much as, if not more than, those wintered outside where they often endured temperatures below zero for a considerable period of time. It was difficult to understand why these colonies should burn as much fuel, and therefore apparently spend as much energy in the cellar at 45 degrees as those packed outside where the need of heat generation must have been much greater. Furthermore, by far the greater portion of this fuel was burned during the latter part of the winter.

Bees in Cellar More Active During Latter Part of Winter, Regardless of Cellar Temperature.

During the early part of their confinement in the cellar, the activity of the bees is apparently for the purpose of keeping up the necessary temperature of the cluster only, but during the latter part of winter the bees are active because they are uncomfortable (either from accumulated feces or from age). In some cases, perhaps, much more heat is generated late in winter as a by-product from activity resulting from discomfort than the total amount produced for the purpose of keeping up the cluster temperature during the entire winter. Therefore, more bee energy is sometimes wasted and stores needlessly consumed in the cellar, because of discomfort and restlessness, than is used up by colonies of equal strength outside to overcome the greater difference in temperature, thus completely nullifying the advantage of the protection afforded by the cellar.

Higher Temperature Desirable During Early Part of Winter.

We found with this cellar at 45 degrees that the colonies near the ceiling of the cellar wintered better than those lower down where the temperature was lower; also that

colonies crowded down to five or six combs by means of chaff-cushioned division-boards wintered better than colonies of the same strength with the full set of combs; and colonies with contracted entrances wintered better than those having the bottom-boards removed or those having the large summer entrances. All of these things indicated that a temperature of the cellar above 45 degrees would give better results; yet, when we considered the difficulties sometimes experienced in keeping the bees in their hives at higher temperatures, this method of reducing the winter activity of the bees did not look promising.

I remember now, however, that trouble from temperatures too high did not occur until the latter part of the winter. In fact, with the small amount of heat the bees generate during the early part of the winter, it would be difficult to maintain a higher temperature in ordinary bee-cellars without artificial heat. Just at the time when the bees would have been more comfortable and quiet in a higher temperature, we were carefully holding it at 45 degrees, because we thought the best temperature for March must also be the best for November.

When the stores are of such a character that the bees are much more active during the latter part of the winter, it is not reasonable to attempt to maintain the same cellar temperature thruout the entire winter, and the same thing must be true in a lesser degree even with the best of stores. To hold the temperature down to 45 degrees during the early part of winter compels the bees to generate sufficient heat to raise the temperature of all parts of the cluster to at least 57 degrees, and this, too, at a time when the bees are more willing to co-operate in energy-saving than at any other time during the winter. A lower temperature at this time should be deferred until quite late, the time when the bees are generating heat as a by-product because of discomfort. When this time does come, if the stores are such that it comes before time for taking the bees out, it may be well to maintain a temperature of 45 degrees or lower, for then the bees are generating heat regardless of the temperature of the air surrounding them, not for the purpose of keeping warm, but because they are restless.

Bees Are Best Thermometers.

We do not expect again to attempt to regulate the cellar temperature by means of a thermometer hanging somewhere in the bee-cellar, but rather do our regulating by noting the behavior of the bees. When it is right for the bees, it will be well to note the thermometer reading for future guidance. It will be useful in this way only when all other conditions, such as strength and number of colonies, size and shape of the winter chamber, the amount of protection afforded by the hive, the size of the entrances, etc., are exactly the same. The proper cellar temperature is just a shade below that temperature which causes the bees

to form a rather loose but definite cluster. It should be low enough to keep the bees in their hives, and high enough to make it unnecessary for them to generate heat to maintain their necessary cluster-temperature. It decreases as the winter advances or as quiescence decreases. It is not the same for all cellars, for all styles and sizes of hives, for all sizes of entrances, nor for all sizes of colonies. It is a delicate adjustment, but one which may be attained by a careful study of the response of the bees, and will usually be found to lie somewhere between 55 degrees and 45 degrees. During November and December, when the instinct for quiescence is so strong, it is certainly near the higher figure, while in March it may be much lower.

Ventilation.

When the temperature is correct the need

for ventilation is but little during the early part of the winter, because at this time the bees are least active. The fires are now banked, and but little oxygen is needed. When stores are not the best, the need for ventilation increases slightly as winter advances. While but little ventilation is needed to supply the bees with oxygen and to remove the products of combustion during quiescence, we would like to have at all times some movement of air within the cellar for other reasons, if this can be accomplished without causing too low a temperature.

When we can have conditions for either outdoor or cellar wintering, as outlined in these articles since August, we need have no fear of not having colonies abundantly strong on April first.



A sugar train being hauled thru the mountains in Santa Clara Province, Cuba. Urbano Trista Perez, an attorney and beekeeper of Santa Clara, who sent Gleanings the picture, said: "The largest yielders of honey in Cuba are in this order: First, campanilla blanca (or aguinaldo); second, royal palm; third, sugar cane."

FROM THE FIELD OF EXPERIENCE

CONVERSATIONS with DOOLITTLE

The Necessity for Knowing the Exact Sources of Honey Nectar

"I live in a locality where the wild red raspberry, that blossoms early in the season, abounds and gives the best, and about the only source of surplus honey. Therefore, the all absorbing question with beekeepers here is how shall we have populous colonies early, that we may get a good surplus from raspberry. Can you give us something how this may be done so we can be preparing for the season of 1919?"

Some two score years ago there was a rage throughout nearly the whole country for early brood-rearing, and an apparent strife to see who could induce their bees to arrive at a point strong enough to swarm the earliest. Some carried their colonies into warm rooms during nights and cold spells. Others put hot bricks and irons in the covers of the hives nights; and still others banked the hives, all but the entrance, in heating manure; but the advantage gained proved hardly sufficient to overcome the time, labor, and material used. At that time the most dwelt-upon theme was, to "keep the colonies always strong," claiming that in this way the best success was to be attained. Then it was advocated by some that, if we put on the supers of unfinished sections left over from the previous season early, it would start the bees to working early, thus securing the first white honey which comes in. Others, living in a section where mustard abounded, to an extent of hundreds of acres being yellow with this bloom in the grain fields, as far as eye could reach, said, this would not answer, as this mustard honey would be mixed in with the white honey from raspberry and white clover to the spoiling of the whole; or the bees might carry up from the brood-nest some of the buckwheat honey stored the previous season. It would be better, said they, to put on extracting supers at first. This started the bees to storing honey in the supers, and, as soon as the danger from dark honey was past, the extracting supers were given to the weaker colonies, that were to be run for extracted honey, and sections placed on the colonies from which the extracting supers had been removed.

The "always strong men" argued that, no matter from what source the honey came, the bees would be on hand to work on whatever flowers bloomed. But it was found by close observers that, with the growth of a colony in numbers, as the season advances, in a stage of this growth, when the age of the field bees and their numbers as compared with that of the nurse bees, and when the period of egg-laying was at the

right stage, there came a time when the condition of the colony enabled them, as a whole, to take advantage of any certain honey flow so as to bring the most profit to the apiarist. If this condition is brought about too early, it is as disastrous as to have it arrive too late. The colony that is very populous early in the season (a colony that will just suit the raspberry man), has passed its prime when the basswood comes on. The man who produces basswood honey prefers a colony of moderate strength early in the season, one that will gradually build up and be in "full bloom," when the basswood is in a similar condition. The most practical beekeepers of the twentieth century have arrived at the conclusion that, to meet with the best success, we must raise our bees with an eye toward the main harvest of honey in our locality; that we can have the maximum amount of bees on hand just at the right time, so that countless thousands may work with the proper energy and zeal, having their whole "thought" absorbed in amassing as much as possible of that harvest into the supers and hives while the flow is on.

If the main harvest comes early in the season, as does raspberry and white clover, then bend every energy to bring the bees up to countless thousands, with energy and zeal to meet that early flow. If the flow is from basswood, then work for that, by holding them back a little the first of the season, but "rushing" them a little later. If from buckwheat, or fall flowers, hold them back still later in the season, and equalize, till finally all are brought up to the countless thousands with energy and zeal, just as the flow from buckwheat begins.

In my locality, there are no conditions which I know of where it pays to have strong colonies during the whole season. If any have a location which furnishes a continuous nectar flow from the blooming of the pussy willows and soft maples, in the spring, till frost cuts off the supply in the fall, then, possibly, the working for strong colonies during the whole of this continuous season might be made to pay, if the swarming fever was not brought about. If so, then a certain time of "hold up" would be necessary, or many colonies would spend their strength thru a desire to swarm, rather than having an energy and zeal for amassing honey.

But from my multitude of correspondence during the past half-century, and from reading of the bee papers during that time, I am led to believe that, even in the most "drawn out" locality, there are times when double the flow of nectar comes from some one or more sources of bloom than at other times. And where this is the case it well pays to have those countless thousands on




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hand at that time, rather than have a lesser number at all times.

With the above, comes the necessity for each individual beekeeper to have a thoro knowledge of just the source from which all nectar comes. It is all right to read and consider the experience of others, but each man or woman must thoroly understand the conditions of their locality, and govern themselves accordingly, before they can hope for the best of success.

Borodino, N. Y. G. M. Doolittle.

[It is with regret and sorrow that we have to announce to our readers that we have now printed the last of the "Conversations with Doolittle." A half dozen of these, prepared by Mr. Doolittle before his death last June, have appeared in Gleanings since the famous beekeeper completed his earthly labors. But the pen has now dropped from the lifeless hand, and he will appear no more in these pages save as a quoted authority and memory.—Editor.]



A LIFE BEAUTIFUL

A Tribute to the Late G. M. Doolittle by a Pastor and Close Friend

Nineteen years since I began a four years' pastorate in the Methodist Episcopal Church at Borodino, N. Y. This is a rural hamlet credited with a population of about 150 people. One of the first men whose acquaintance I made was G. M. Doolittle. He lived a mile distant and was connected with a Baptist church a little farther on. I had met him and learned of his standing as a bee-keeper and writer on bee topics while I was located on an adjacent charge a few years before. We took to each other as congenial friends and brothers beloved. The friendship has lasted. For 15 years I have seen neither place nor people, but have kept in touch with him by correspondence. He was large in body, mind, and soul. Without offspring, he reckoned himself indebted to humanity to the extent of the good he could do. One of his quiet kindnesses was support of a crippled English widow. He proposed to the town board to meet half the expense of her keeping instead of allowing her to be sent to the poorhouse. The board failing to meet the suggested half, he paid her board in the home of a widow who needed a companion. His wife was lame from childhood. His courtship was discouraged by his friends. He replied that he liked her all the better for her misfortune. It was always told that he never gave her an unkind word, and that it was his custom to prepare and serve her breakfast. Six years ago she had a shock of paralysis. Since then he had cared for her as a child.

My first conversation with Mr. Doolittle followed a funeral service at which I had spoken on the subject of immortality. He expressed his appreciation, and said: "Call on me next summer, and I will demonstrate its truth from the inside of a beehive." I never went there for that purpose, but often called, usually finding him in fit weather with his bees.

The main part of the farm on which he was born had been sold. He retained 20 acres, most of which was covered with a basswood grove, for a windbreak. There he built his needed buildings, together with a house for his mother and maiden sister. Here he had his queen-breeding establishment, consisting of about 60 colonies or nuclei. Three miles distant was his out-apiary used for the production of honey. I often found him manipulating the queen-rearing nuclei. He would get a veil for me, and together we would visit. He could demonstrate and explain the work as well as do it and write about it.

It was unpopular in Borodino to hitch horses to posts on the street. So, on his daily visits to the postoffice, his horse was driven into one of the sheds back of the church and parsonage. Our mail went out at noon, and I knew when to look for him—from 11 to 11:30 a. m., in time to mail the day's quota of queens. He claimed one-fourth of the business of the local postoffice, while it was locally conceded to be one-half. He often told me that he sold all he could produce by advertising one-half the year in Gleanings.

I could say much, as my heart dictates, about him as I knew him—cheerful, friendly, capable, successful, public-spirited, spiritual, good, true—one of God's noblemen whose presence was a constant proof of the immortality of the soul.

Akron, O.

R. E. Huntley.



REMARKABLE WINTERING EXPERIENCE

Bees With Lots of Ventilation Wintered in a Wet, Frozen Cellar

Dr. C. C. Miller's remarks on temperature in the cellar, page 667, November Gleanings, makes me think that perhaps my experience might help to decide which was more important, fresh air or temperature. Last year I sold the farm expecting to move into the village. When I was ready to move there was not a vacant house in the village, so I rented a place a mile out. I moved my bees into the cellar of that house on Nov. 15. Soon afterward the weather turned cold and to my astonishment froze everything freezable in the cellar. Apples and vegetables were frozen solid, and nothing entirely

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thawed out until April. Water during a February thaw came into the cellar to a depth of several inches. In about three days it again turned cold and the water froze so I could go to any part of the cellar on the ice. After the freeze I covered the bees as well as I could with robes and rag carpet. The bees were in the middle of the cellar on boards about three feet from the cellar bottom. After the water and ice got into the cellar it was so very cold and damp I thought nothing could live there, so I left the door leading from the kitchen directly into the cellar open the most of the time. It nearly froze me and didn't seem to change the air of the cellar much, but I was determined those bees should live if possible. The result was that I put seven swarms into the cellar and took out six alive. The one that died was weak when put into the cellar. Two of the surviving colonies were weak but built up. I now have 14 swarms ready for the cellar, and sold \$74 worth of honey this season.

Now, as to ventilation: When the wind blew, one could feel the air stir anywhere in that cellar and thruout the house. So the bees had plenty of fresh air. When I first had bees, I kept them in a large cellar, with little or no loss, usually no loss at all, but I always filled the room next the cellarway with fresh air, then opened the cellar door.

Last winter my bees were the quietest I have ever known them. Not a sound from them much of the time, but if I would give a little tap on the hive there would be an answering buzz. I have noticed when the bees were buzzing loudly in the cellar of my former home, if I would give them fresh air, they would almost immediately quiet down.

Eva A. Brown.

West Chazy, N. Y.

[We can't explain how your bees wintered under such very adverse conditions. It seems almost miraculous. We certainly do not advise any one to try wintering in such a cellar or any cellar at all like it. Dr. Miller will perhaps give us his views on this very exceptional wintering incident.—Editor.]

INDIVIDUAL-HIVE WINDBREAKS

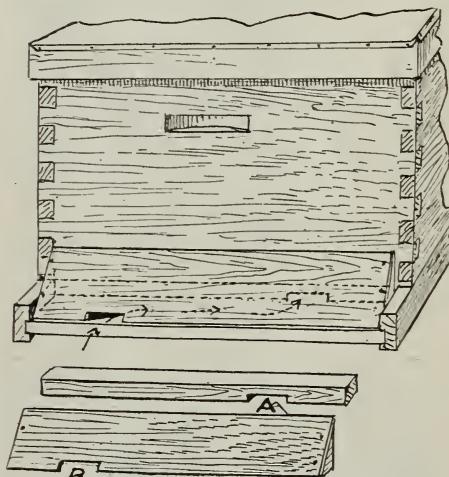
A Device for Use at the Entrance Which Stops a Wind Blast

Recently J. F. Kight of Indianapolis, Ind., called on us. He brought with him a little device to attach to any standard Doolittle or Langstroth hive to shut out the piercing winds during winter, late fall, or early spring. It consists of two parts—one an entrance-contractor, as shown at A in the illustration; and the other is a sort of stormdoor, with the entrance B on the opposite side of the hive. The bees pass in at B,

turn to the right, and enter the hive at the contracted entrance A. A cold piercing wind, while it could get into the hive, is broken by the detour in such a way that the bees are not chilled.

Some years ago we tried a scheme in quite an extensive way by leaning a board up against the entrance. The bees on emerging from the hive would pass out at the ends of the boards; but we found in late fall that the boards confused the bees, with the result that many of them did not get into the hive. A stormdoor like this, if used at all, should be placed on the entrance in early fall, so that the bees will get used to it. It may be left on all winter and until late spring, when it may be removed to provide better ingress and egress.

It is important to have the front of the stormdoor flush or even with the alighting-board. It is important to have the entrance



Device for hive entrance to stop the admission of wind blasts.

fixed in such a way that there will be no ledge or projection to catch snow and ice.

Mr. Kight's idea is shown by the illustration looks as if it might be a considerable help, especially to colonies that do not have a suitable windbreak. This form of stormdoor is only another form of windbreak; and perhaps the question might be raised whether a large, high board fence would be necessary when individual stormdoors or windbreaks are used. The purpose of the high board fence is two-fold—to prevent cold air from shooting into the entrance, and also to prevent a cold wind from striking the sides of the hive. When a cold wind strikes the side of a house, notwithstanding no air can penetrate the windows and doors, it takes more heat to warm the house. The same principle applies especially in the case of a hive. A cold atmosphere when the air

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is still will not penetrate thru a hive wall as will a higher temperature accompanied by wind. A stiff blow at a freezing temperature carries away the heat generated by a colony of bees much faster than a still air down close to zero. E. R. Root.

Medina, O.

MURDEROUS JAPANESE HORNETS

In His Own English, a Japanese Beekeeper Tells of Their Destructiveness

Being a reader of Gleanings since the years before, I feel very happy to be so. I think you will take the attention of the beekeeping in Japan, and am sure you would like to do.

Yesterday, the September 19th, my bees are attacked by hornets. I am sending specimens of the same (queen and worker hornets) in this cover, I will tell you of Japanese hornets, the greatest bee enemy in Japan. They are, indeed, the worst dreaded enemy of our bees in our country here, altho I do not know if hornets or wasps do not great damage to your bees in your country.

May I tell you of the fact that if one or two hornets come into our apiary and attack a hive of bees which come out of the entrance to guard, until the whole bees of the hive are killed or badly wounded? There is no fighting between the two, altho there are many crowding bees in the entrance. Because the hornet is so strong, it never minds the bee's sting or jaw. In the most case,



Picture of terrible Japanese hornets, showing size as compared with Italian honeybee. About one-half size

after 10 or 20 minutes, our loving bees of the hive are wholly destroyed and ruined, altho the hornet can not get thru the narrow hive entrance. So doing, they come our apiary from August to November, day by day. So it is the most dreaded enemy of Japanese beekeepers.

Yesterday morning, about 8 a. m., I went to my bees in the back yard. There were four hornets upon a hive. A hundred bees were wounded and killed. Instantly I hit down them with wire-racket which I made

as hornet-hitting racket, and killed them, cutting off the head. I came back to my work in the house. Nextly, about 10 minutes after, I went out to see the bees. There were two hornets upon another hive. About 50 bees were killed. I hit down hornets all. Then I determined to be standing in the yard till evening, and so I did. Hour after hour? No! minutes after minutes the hornets came. I hit them all; and upon the sunset I counted 40 of hornets' heads.

I ask if you will kindly tell me of the hornet in your country. Do they never such damage for your bees? I would like to have an opinion from you and your fellow beekeepers on them. Yasuo Hiratsuka.

Tara, Gifu-ken, Japan, Sept. 20, 1918.

THE PRICE QUESTION AGAIN

Harm Done by Those Who Sell Small Amounts of Honey Irregularly

An article under caption, "The Eternal Price Question," in the October Gleanings, impels me "to speak in meetin." It occurs to me that your correspondent, Dr. A. F. Bonney, is like those farmers he mentions "as having started." He has made a start, but has need to go farther than he has yet gone, if he really wants to settle the price question, and put it where it shall cease to trouble the producer of honey. Whether he be a large or a small producer, makes little difference. The same person is rarely, if ever, both a large and a small producer of the same article at the same time.

Usually the large producer gets a better price for his product. Why? Not because he has more honey to sell than his neighbor, or a better quality perchance, but because he doesn't attempt to retail his honey at wholesale prices. If asked "what is wholesale price," his reply would be "the prices quoted by wholesalers to retailers." And just there is where many producers make their mistake. They do not consider even when they have only a small lot of honey to dispose of that by retailing it at wholesale prices they are not playing the game fair. The price does not depend on location half so much as on the salesman and on the general market value of the product, which is established and maintained by the jobbers and those who know the market's needs.

After several years' experience on the road as a honey salesman, selling hundreds of cases every month in the year to wholesale and retail trade, I am quite sure there is no one thing more demoralizing and which interferes as much with the sale of honey in certain localities as the attempts of some producers to dispose of a few hundred pounds of honey which they happen to have.

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They fail to realize that if honey is to become popular enough so that it will pay them as well to keep bees as hogs, it must be available to the consuming public thru the regular channels of trade, so that people may procure it whenever they want it.

People buy and pay good prices for what they think they want these days. Making the public think they want honey requires hard work by experts.

Your problem will be solved if you follow this simple rule: When wholesaling, sell at wholesale price; when retailing, sell at retail price, remembering that in spite of the socialistic propaganda both the wholesaler and retailer are a necessary part of our modern civilization.

Yours for more and better honey,
A. S. Brown.

Warren, O., Nov. 1, 1918.

HOW LARGE A HIVE?

Queens More Prolific Than Formerly; the Jumbo Hive Very Satisfactory

Referring to hive sizes, as mentioned in the editorial on "Bigger Hives and Colonies" in September Gleanings, keep clearly in mind that it is brood-chamber capacity that is the real point at issue. With the present supering system there is ample opportunity to expand or contract the storage room, therefore, so far as hive capacity, brood and surplus combined, is concerned, every modern hive is elastic. Not so with the "long idea" hives. They must at the beginning be made to meet the needs of the "locality." Their merits and demerits we will leave to their friends. Capacity of brood nests is affected by shape as well as size and greatly by comb quality. Do not forget this. Shape and proportions of length, to width and depth, have been threshed over most thoroly. Deep hives, shallow hives, and wide hives all have their advocates. There are two points of view as to brood-chambers: one that of the man who wants more or less frequently to expand or contract them, which he does by giving or removing extra chambers; and that of the man who wants something which is right all of the time.

It may be asked why this matter of hive sizes has arisen now? Because our queens have outgrown our present hives. I think it is quite evident that the run of Italian queens today is considerably more prolific than were the queens of 20 to 30 years ago. But be this as it may, there is certainly an increase in the practice of expanding brood-nest capacity, either by giving two bodies or by giving the queen access to a super, both of which practices have drawbacks. Both increase the capital necessary, both double the number of frames to be handled,

and the super plan introduces that vexation, two sizes of brood frames.

An alternative is to use larger brood-chambers, either wider or deeper. To use wider makes useless all present supers, excluders, escape boards, floors, and covers. Even that quarter inch added to the width in the last few years has been a costly nuisance. To make deeper only demands new brood frames, for hive bodies may be pieced down quite readily.

There is little in the way of hives which I have not tried as to shape, size, and protection. For a long time the Quinby (or Jumbo) seemed much too big for our moderate flows, but in recent years a careful comparison of results with it and with L's in the same territory, has caused me to change to the Jumbo entirely, the L's being used for extracting supers. I have stuck to the standard 16-inch width and use nine frames in a "10-frame" hive with a 1½-inch spacing and a ¾-inch offset of the outer combs from the hive sides. The offset is very valuable. The results are the most satisfactory of anything I have encountered in beekeeping in many years. I would not change a single point in them.

Arthur C. Miller.

Providence, R. I.

A BRITISH COLUMBIA BIG RECORD

One Colony Filled Nine Supers from Fireweed and Did it in a Hurry

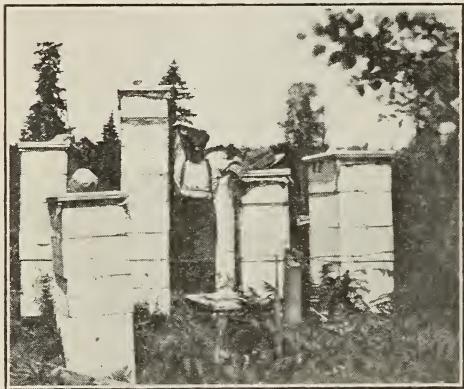
I enclose to you photo of a "stack" of supers from the apiary of W. H. Turnbull, about 20 miles from Vancouver. Mr. Turnbull is standing in the middle of the picture. He is young in beekeeping years, but is already one of the most practical and successful beekeepers of this country. The first supers of this lot were put on July 3. Up to that time all were in single-story ten-frame L hives, the season's outlook being very discouraging; but welcome showers and warm weather, so essential to nectar secretion, made a great change. From that time (July 3) two ten-frame supers, partly foundation, were put on the highest "stack" and filled about every week. The lot was taken off and extracted on Aug. 10. The highest stack, seven supers, yielded 304 lbs. of honey. The entire yield from every hive was from fireweed. Since Aug. 10 the high-record colony has filled two full ten-frame supers additional, making nine for the season.

You will notice that there is no excluder. The surplus supers were put on just above the brood-chamber in every case, which, as I have stated, was a single ten-frame hive, and were filled so quickly as to completely prevent the queen from working above, a circumstance which is unusual in British

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Columbia, as the flows are generally slow and the queen goes to the top story unless confined below by an excluder.

Looking closely at the photo on Gleanings cover for August, it shows that on the bottom-board of the tallest stack is a Danzenbaker, next a ten-frame L. with excluder, and on top of this another ten-frame with another excluder above, leading one to be-



They have some big honey yields away up in the northern country of British Columbia.

lieve that the surplus above is the work of two queens, or properly, two colonies. If this is correct, the record is not remarkable. Another hive in the photo shows two excluders, and if this view is correct, I am curious to know where is the advantage. It is, however, a creditable showing.

When it comes to building "stacks" of supers we of the virgin Northwest are not to be outdone by the "effete East." But do not pack up and move here to keep bees, as climatic conditions are not often favorable and low averages are the rule; but complete failures have never been known.

W. H. Lewis.

Edmonds, B. C.

ANOTHER POINT IN ITS FAVOR

Demuth Winter Case Greatly Diminishes Heat Loss at Bottom of Frames

I have taken great interest in the apparent practicability of the Demuth case. All the points of advantage have been well set forth. However, there is one point which seems to me most apparent, and which has not been touched upon particularly. This is direct radiation from the bottom of the frames thru the entrance, which is the cause of the greatest loss of heat in any hive in any system of wintering. It appears to me that, whatever the size of entrance, the bottoms of the combs are directly affected by the changes of outside temperature,

and especially by the direction and velocity of the wind (currents of air). If a colony is wintered in a 10-frame hive, there is an area of radiation at the bottom of the combs 18 by 14½ inches (261 square inches). If the colony is contracted to seven frames (in the horizontal position), the area of radiation directly affected by the entrance is 10 by 18 inches, or 180 square inches, amounting to nearly 31 per cent saving of heat radiation. When wintered under the Demuth system on seven Hoffman frames the self-spacing device gives added protection, reducing the area of direct exposure of the combs to about 6 by 10 inches, or 60 square inches at the bottom end of the seven frames—an advantage of a reduction of 77 per cent radiation compared with the ten frames, or 33 1/3 per cent reduction in relation to seven frames in a horizontal position. In presenting this argument I purposely have not considered the advantage of the increased height of the chamber and its proportional advantage.

The above figures, it appears to me, fully account for any advantage that may be experienced by the use of the Demuth system of wintering bees.

Winthrop Filleherin.

Kingston, Mass.

[Your point with regard to the Demuth case having a relatively small amount of bottom exposure is well taken. Of course, we all realize that the bottom of any hive will necessarily be the coldest part of that hive. But we have never made so careful an estimate along this line as you have done. The smaller the bottom is relatively, and the deeper the room, the better for the bees.—Editor.]

TWO CROPS FROM ONE SEEDING

Beekeepers Will be Interested in this Man's Handling of Sweet Clover

My success with sweet clover and barley this year ought to point a way to beekeepers how to have a big nectar-producing crop of sweet clover, as well as a big field crop. In April I seeded at the same time to barley and sweet clover an eight-acre field. In July the barley crop was harvested. It yielded 40 bushels to the acre. In October the first cutting of sweet clover was secured, which yielded 20 big loads of choice hay. Next year I can reasonably expect from this and another 10 acres of sweet clover, which I am now pasturing, enough to fill a 14 by 40 foot silo with silage the last of May, and to yield a crop of seed in September and leave the soil in prime condition for bumper corn crops the next two years.

Who can beat it? Henry Stewart.
Prophetstown, Ill.

R. E. NEW-
COMB referred the matter of cane versus beet sugar to the head of the Chemical Department of Oberlin College.

The professor gave quite a talk about it before the class. "He said that almost every one believes that beet sugar is in some way inferior to cane sugar, but that there is absolutely no difference between pure cane and pure beet sugar; that there is no physical or chemical difference between highly refined cane and highly refined beet sugar, no more difference than there is between iron from Michigan and iron from Ohio after all the impurities and compounds have been removed. He said that I need have no fear about giving beet sugar to bees."

Coming from such a source, that statement should be authoritative. But our British cousins, who insist that beet sugar is not proper winter food for bees, may reply something like this: "The professor is quite right. The sugar, when perfectly refined, is all the same whether from cane or beets. But has the process of refining yet reached that state of perfection in which beet sugar is left entirely free from injurious impurities?" Well, perhaps it makes little difference what the beekeeper thinks; when he buys sugar the chances are that it is from beets, whatever he may think he is buying, and tons of beet sugar have been fed bees for winter without disaster. Possibly Yankee refineries have achieved the impossible.

* * *

Interesting is the difference in results when queens from European foul brood colonies were given to healthy colonies, page 663, November Gleanings. With the Klabuhns, always bad; at Medina always good. Why? Were the Medina bees immune, the others not? Of course, there is the possibility at which Mr. Root hints, the possibility of infection from neighborhood diseased colonies. In the uncertainty of deciding one is inclined to consider the probability or possibility of a queen carrying the disease. Is European foul brood not a disease of the brood, never of the mature insect? If so, the queen couldn't lay diseased eggs, and the only way she could convey the disease would be by carrying diseased honey. But she doesn't feed larvae. Neither does the queen feed workers; workers feed the queen. How then could the queen carry the disease? Until queens are found to carry the disease in a locality where there is no disease within a certain distance, it is probably safe to say that the Medina bees rather than the bees of the Klabuhn brothers are the ones to rely on.

* * *

Thanks, Mr. Editor, for the peep behind the scenes you give us on page 650. Miss

STRAY STRAWS

Dr. C. C. Miller

Iona Fowls, I bid you a belated, tho very hearty, welcome. I'm sure your presence will be helpful, and I commend to your especial care the chap who has trouble with his language. But, Mr. Editor, don't you see you have made it a bit embarrassing for me? After this when I want to "sass" the editor, how am I to know it isn't a woman at the other end of the line?

* * *

Belva M. Demuth, on page 658, speaking of my cellaring bees, you say: "In most cases the records indicate that the bees had a good flight the day before being carried into the cellar." Please let me say the same thing in a little different form by saying that in most cases the bees were carried into the cellar the day after having had a good flight. You're right in saying that I haven't regretted putting them in too early, but have regretted putting them in too late. And yet that hardly expresses it correctly, for it was not really the lateness I regretted, but the number of days the bees were left out without a flight just before being put in the cellar. The later they are put in the better, if that lateness gives them another flight, so that they can go into the cellar with empty intestines. The point is that one day outdoors in adverse weather unfits them for enduring long confinement perhaps more than a week of confinement in the favorable conditions of the cellar. As it is desirable to have them go into cellar well emptied, the rule is to take them in the next day after their last flight. The trouble is to tell in advance when the last flight may be. It may be in November, and it may be in December. Who can tell? Well, suppose they have a good flight the middle of November. They may have a flight later, and they may not. I think I'd chance it to take them in. If no warm day comes later, I'm all right. But suppose there comes a day a week or two later, or even a month later, when they could have a flight. I console myself by saying that these extra days of confinement in the cellar have done little harm: they were in good condition to stand the whole winter anyhow; and if I hadn't taken them in the middle of November, there might have been no later flight, and then I'd have been in a box.

* * *

In feeding sugar syrup without any mixture of honey, shall tartaric acid (a level teaspoonful for every 20 pounds of sugar) be used or not? Some, as The A. I. Root Co., say they have no trouble without the acid. On the other hand, there has been report of the syrup granulating even when acid was used. Possibly the thickness of the syrup has something to do with it. Wouldn't a very thick syrup have more need

of acid? That raises the question as to the proper thickness for late feeding. Of course, all agree it is better to feed thin syrup, and not feed too late. But for late feeding what? Root's A B C and X Y Z says two and one-half parts sugar to one part water. Dr. Phillips says two parts sugar to one part water. I have fed a good many pounds of sugar—for which I hope I may be forgiven—always two and one-half to one, and there seemed no objection. I always used acid with it. But it is better to use no acid and use honey in the syrup, the more honey the better. [We have fed quantities of syrup late in the fall, using two parts of sugar to one of water, with no honey or tartaric acid, and have had no trouble from granulation. When feeding a thicker syrup than this, we have used either tartaric acid or honey (that we were certain came from healthy colonies). Take two bottles of this thick syrup, one containing tartaric acid and one without it, and notice the difference in rapidity of granulation. A few days will tell the story.—Editor.]

* * *

J. L. Garner sends me from Texas a sample of an important honey-source in his region, which he says furnishes so much that there are not enough bees to gather it. I don't wonder when I see it solidified in large crystals of rock candy on the leaves and gall apples from the live oak. One could hardly imagine that the crystals could be so plentiful.

* * *

I read aloud what Stancy Puerden says, page 669, about using for soup the chicken bones left on the dinner plates, and then waited for a protest. None was forthcoming, so I ventured, "I'd hardly go as far as that, would you?" "Um-huh," said my wife complacently, quickly adding, "If I knew my crowd." I accepted the amendment.

* * *

After reading The British Bee Journal of Sept. 26, I should have made a vigorous effort to secure a supply of seed of *Echinops sphaerocephalus*, if I had had no previous experience with the plant. A Harwood, in an interesting series upon bee plants, says of this plant, "No bee plant that I have ever grown was so attractive to the bees. Whenever the weather was favorable the heads were crowded. I have counted 14 or 15 bees on one at the same time."

This is the Chapman honey plant that had a big boom in this country a number of years ago, but is not heard of now, and is not included among honey plants in the bee books. Upon its introduction I planted quite a patch of it, and like Mr. Harwood I never saw bees so thick upon any other honey plant. But close observation showed that the bees were not in eager haste in their usual way when getting a big yield, but were in large part idle, and it looked a little as if the plant had some sort of stupefying effect upon them. At any rate, I

should not take the trouble to plant it now if land and seed were furnished free.

* * *

Mr. Editor, I said on page 666 that if you would say that more than one colony out of every hundred had skyscraper piles over them I would climb down. You have made no categorical answer to my implied question, but what you say on page 658 makes me now think that I was talking about something of which I knew very little, and of which you knew a great deal. Mr. Editor, I climb down with my humblest apology. Some day I may become wise enough to learn that "fools rush in where angels fear to tread."

* * *

Editor Townsend says in Domestic Beekeeper: "It has become a habit with us to sell early, and we have usually done well by so doing, but during the last two years a new condition has confronted the honey-producer, and the one who has held out longest has secured the best price." It might be a bad thing if all should agree to sell early, or if all should agree to sell late. Throwing all the honey on the market at one time, whether early or late, would have a tendency to depress it. But it will help no little, if there be some organized understanding as to what the price should be, whether early or late. This year I followed the advice of the committee of the Chicago and Northwestern, and sold at retail at \$1.60 per 5-pound pail. It seemed like a pretty big price; yet it never went more promptly, and I've no doubt it would have gone nearly as promptly if I had asked \$1.75. But \$1.60 is a plenty.

* * *

After further experience, I think I can recommend sending extracted honey by parcel post. All I've sent has been in 5-pound pails with no packing whatever, the address written on a white space that happened to be on the label. So far as I've heard, it was all received in excellent condition, including a pail sent to Massachusetts. On this latter pail the postage was 38 cents, insurance 3 cents, war tax 2 cents, making the pail cost the consumer \$2.03, or a fraction more than 40 cents a pound. Rather expensive, but the customer seemed well pleased.

* * *

That talk about wasting valuable time at conventions, page 649, is excellent, Mr. Editor. You might also have added a word against cutting time out of the sessions to make a visit to the knitting factory, or whatever it is that's the particular pride of the locality. Committees, as you say, can save the time of the convention, but here a caution is needed. I recall a convention where a committee was kept occupied thru practically all of a half-day session of the convention. Some of the best men there were on that committee, making it a half-day lost to them, and their absence was a distinct loss to the convention. Let committees meet between sessions.

ISN'T there some mistake in regard to the cost of a winter case to be made in panels as described on page 652 of November Gleanings? The Editor

says the cost would be about \$3.00 per case, less than an eight-frame hive, catalog price. Well, hereabouts, the lumber, nails, etc., would cost three dollars or near it, to say nothing of the labor of making. [It would have been a little more accurate, had we said three dollars per colony. The actual cost is between nine and ten dollars per case.

—Editor.]

* * *

"The person who keeps two or three colonies in first-class condition and gets full results is just as good an apiarist as one who keeps more bees and takes no better care of them," says Hamlin Miller, page 674—a fact worth remembering.

* * *

M. C. Richter of Modesto, Calif., on page 673 advises members of the California Honey Producers' Co-operative Exchange to order their supplies of the Exchange early, as prices are likely to advance. Now this is just as good advice for those in other sections of the country who are not members of any exchange.

* * *

The experiment related by H. H. Root on page 663 is of more than usual interest. To introduce 37 queens from colonies badly infected with European foul brood into two- and three-frame nuclei and not have the disease appear, would seem to be almost conclusive proof that this disease is not transmitted by the queen. Had these queens been black queens, I should feel sure that this disease was never transmitted in this way.

* * *

Some three thousand years ago, a writer told us, "there is nothing new under the sun"; but if he had lived in our day and read the title of an article by E. R. Root in the November number of Gleanings, "Skyscraper Beekeeping," he would have rubbed his eyes and said, "What is that?" And some of us old beekeepers feel much the same way. Is it true that we have not been getting much more than half the honey we might with better hives and better management? It is a subject that will bear looking into and investigating very carefully. If 45,000 pounds of honey can be taken from 300 colonies, it is certainly much more profitable than to take 30,000 pounds from 1,000 colonies. I propose to try to see what can be done with a few colonies first.

* * *

I am sorry to disagree with so good an authority as Belva M. Demuth, but she tells on page 657 that when there comes a nice warm day in November, 'The clusters

then unfold completely, and probably every bee except the queen of each colony goes forth into sunshine before the flight ceases.'

Now this is ideal, and just as we would like to have it, but I doubt if it is true in the far North. I watched very closely last autumn, but saw no day when it looked as the half of the bees flew out. There were days when some colonies flew freely, and other colonies flew some; but there was no wholesale flight such as she describes. [In this respect there is considerable difference between Maryland and Vermont. Whether every bee might fly would depend partly, no doubt, on the lateness of brood-rearing.—Editor.]

* * *

The use of a single hole for winter is a capital idea, as given on page 653. Where a hive has a large entrance, it can be easily made into a single hole by closing with a couple of blocks, leaving the hole in the center. I have used double-walled hives for nearly 50 years, and for the last 25 years, I suppose, I have used a hole in the front of the hive above the bottom entrance to prevent the entrance getting clogged. This hole I made by boring with an inch bit thru the outside case and brood-chamber and inserting a tin tube, thus making the entrance about $\frac{1}{8}$ inch in size. This has given me entirely satisfactory results. During severe winter weather these holes will be almost completely closed with frost, that, as soon as the weather moderates, melts without harm to the bees. Of course, we make the lower entrance very small, and, if it gets closed with snow or ice or dead bees, it matters little as there is an entrance above, that is always open if it is small enough. A curious fact about an entrance above the bottom of the hive is that during the spring and summer the bees seem to prefer it to the one lower down.

* * *

"Gleaned by Asking, Iona Fowls." Page 682. That looks good after what the Editor has said of Miss Fowls on page 651. It was of special interest to learn that Miss Fowls had served her apprenticeship in bee-keeping in a poor locality or under hard conditions. How often it turns out that what seems a hard lot proves a blessing in disguise. How many beekeepers have we known that started in favorable years and were full of enthusiasm, but, when poor years came or disease broke out among their bees, were ready to give up, and we heard little more from them. Almost any one can succeed with bees in a good season. It is the tiding over the poor years where we most need help.

Thrice welcome will be Miss Fowls to the readers of Gleanings in Bee Culture.

USUALLY I thoroly enjoy working on my copy for this department. So many readers have said or written such pleasant things of Our

Food Page that I have come to feel that it is my opportunity to send a message to thousands of friends scattered not only over every part of the United States but in many distant parts of the world, for kind letters have come from even far-away Australia and New Zealand.

But this month, for some reason, writing was drudgery of the hardest kind. The terrible influenza epidemic had cast such a shadow over our country that it was hard to realize that the sun would ever shine normally again, and I can never write when I am nervous and depressed.

This morning (Nov. 7) came the joyful news that our State of Ohio has at last gone dry. This afternoon, being unusually tired after a morning's work in the kitchen, I bathed and lay down near an open window to rest a few minutes before finishing my copy. Suddenly a whistle began to blow a long, continuous blast. Other whistles and bells took it up, and a locomotive shrieked shrilly. I lay still and wondered why they waited until afternoon to jubilate over the dry victory. And then my fifteen-year-old boy came in and told me the wonderful, unbelievable news, the news that the world had been praying to hear for more than four years. Even if the news was later officially denied as premature, we can surely look forward to a real Christmas with "peace on earth, good will to men."

We are often told that we are all creatures of habit, but I never realized the truth of it until this past year. There are people who can apparently with better grace give up their sons to fight than they can change their habits of eating. And the strange feature is that the sugar restrictions seem to be harder to endure than any others.

In midsummer, when the allowance of sugar per person for a month was three pounds, a housekeeper said to me:

"I do not see of what use it is for you to give out recipes for baking with the wheat substitute flours when there is not enough sugar for baking. I have not been able to bake cake or cookies all summer."

Later, when the sugar allowance was reduced to two pounds per person a month, another housekeeper said to me:

"I find we are actually buying more sugar on the two-pound basis than we did when we were free to buy all we wished."

There you have the two extremes, and I have quoted them because they are typical. The first housekeeper had a family of five,

OUR FOOD PAGE

Stancy Puerden



cereal and fruit."

The family of the other housekeeper used almost no sugar on the table and none in coffee and tea, and consequently even on the two-pound basis they could enjoy their desserts as usual.

One woman who kept a boarding-house kept her boarders from using their entire allowance on the table by the following ingenious scheme: she placed a jelly tumbler containing half a pound of sugar at each boarder's place at the table, calling his attention to the fact that the amount in the glass was his whole allowance for the week. Then she told the boarders that the amount left in the glasses at the end of the week, together with what sugar substitutes she could buy, would be used in making sweet desserts for the following week, and they could easily see if they were greedy with the sugar their desserts would have to be extremely limited.

An American, who has lived in Russia for the past 15 years, recently visited "The Home of the Honey Bees." He is now living in Cleveland, and being a lover of honey came down to visit the "sweetest town on earth," as Medina is sometimes called on account of the amount of honey kept in stock here. He told of the way the Russians have of sweetening their drinks. He said they place a spoonful of sugar or honey on the tongue and then drink the coffee or tea. If they drink a cup of coffee on the installment plan, as I do, they would use at least six teaspoonsfuls to each cup of coffee. In that case a Russian hostess would probably say to her guest, "Do you take coffee with your honey, Mr. Blankski?"

Recently a Gleanings reader said she wished I would give the equivalent in sugar for the amount of honey called for in my recipes. She is fond of honey on the table, but, as her husband is neither a beekeeper nor a millionaire, she does not feel justified in using it in baking. If housekeepers will bear in mind that honey is approximately one-fifth water, they can substitute sugar for honey in any recipe. When you substitute a cup of sugar for a cup of honey omit about one-fifth of a cup of wetting.

There, I enjoyed answering that question because it afforded me an opportunity to casually speak of sugar as a honey substitute instead of the reverse.

Speaking of honey in cooking, another very pleasant subscriber, who recently called at the Puerden home, said he had with difficulty persuaded his wife to try making pre-

serves with honey, and that he liked the result very much, but thought the honey preserves were somewhat darker than those made with sugar. They need not be, if light honey is used and they are carefully made. It is wise not to cook a large amount of honey preserves or marmalade at a time for that very reason. Cook only enough to fill three or four glasses, watching it carefully and stirring it frequently to prevent it from darkening and acquiring that slight caramel taste which injures the delicate flavor.

For your Christmas candies try some of the following recipes and see if sugarless candies are not good. The Honey Fruit Chocolates are delicious and very easily made.

By the way, that "Honey Fruit Chocolate" recipe has a little history. A year ago the Food Administration sent me a leaflet of candy recipes, including one for "Parisian Sweets." It looked tempting on paper, but I thought it could be improved, so I tried it, altering it slightly and adding honey and orange juice. Later, when writing to the Food Administration on another matter, I enclosed a leaflet of some of my sugarless candy recipes, including the one which I had altered and rechristened "Honey Fruit Chocolates." This year their leaflet of candy recipes again includes Parisian Sweets, but now their recipe calls for honey and orange juice.

You would never detect the presence of vegetables in that Christmas pudding. It is especially tender, moist and fruity tasting. Serve it with a sweet sauce either hard or liquid. I published two recipes for pudding sauce in the December issue of 1917.

HONEY CARAMELS.

1 cup chopped nuts	1 teaspoon vanilla
2 cups honey	1 square chocolate

Boil the honey and chocolate shaved fine to 260 degrees F. or until it forms a moderately hard ball when dropped into cold water, remove from fire, stir until it begins to thicken, add the vanilla and chopped nuts, and pour into a buttered shallow pan to cool. When nearly cold mark into squares.

HONEY FRUIT CHOCOLATES.

1 pkg. seedless raisins	2 tablespoons orange juice
1 pkg. dates	
1 cup figs	2 tablespoons honey
1 cup nuts	1/2 teaspoon salt
grated rind of half an orange	dipping chocolate

Put the raisins, dates, and figs thru the food chopper, add the nuts chopped coarsely, the grated orange rind, the orange juice, honey, and salt. Mix well, form into balls, and set aside in a cool place until firm. Melt the dipping chocolate over hot, not boiling water, dip the fruit balls, and drain on waxed paper. If preferred, the fruit paste may be pressed into a shallow pan, cut in squares when cold, and wrapped in oiled paper.

CANDIED ORANGE PEEL.

Cut the peel in strips, put on to cook in cold water, let boil up and drain. Repeat the boiling four times, measure and add an

equal amount of honey, and let simmer until trans'cent. Drain and let dry over night.

HONEY POPCORN BALLS.

1 cup honey	at least 2 quarts popped corn
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Boil the honey to 270 degrees F. or until it hardens in cold water, pour over freshly popped corn, and mould into balls. These are best eaten fresh, as the honey gathers dampness and becomes sticky.

COCONUT FRUIT SQUARES.

1/2 lb. dessicated cocoa	sweet milk
nut	1 lb. honey

1/4 cup currants

Cover the cocoanut with sweet milk and let it stand a few minutes. Put the honey over the fire and bring to a boil, add the cocoanut and the milk in which it was soaked, and cook all until it will drop from the spoon in a thick string. Add the currants which have been washed and dried and pour into an oiled tin. Cut in squares.

STUFFED DATES.

Use the best dates. Remove the stones. Stuff with any kind of nuts available, or peanut butter may be used as a filling. Press the dates in shape and roll in cocoanut, chopped nuts, or cocoa. They are also very good dipped in chocolate.

HUNKY DORY.

2 cups popped corn	2 tablespoons sweet cream
1 cup pecan or walnut meats	3 cakes sweet chocolate

Break the chocolate into small pieces and melt over hot water. As soon as it is melted add the cream, popped corn, and nuts. Stir quickly with a silver fork and lift out in small lumps. Place on waxed paper to harden.

CHRISTMAS PUDDING.

1 cup grated raw potato	1 tablespoon grated orange peel
1 cup grated raw carrots	1 teaspoon soda
1 cup chopped suet	1 teaspoon salt
3/4 cup honey	1/2 teaspoon cinnamon
1 cup raisins or dates cut small	1/2 teaspoon ground cloves
1 cup currants	1 cup barley flour
1/4 cup citron sliced thin	1 cup white flour or more

Sift soda, salt, and spices with the flour; and then mix the other ingredients in the order given, sifting in the flour last and using enough to make a batter as stiff as fruit cake. Steam in oiled pudding mold three to five hours. Serve with honey or a sweet sauce.

SNICKERDOODLES.

1 tablespoon butter	1 cup white flour
1/4 cup honey	1/3 cup barley flour
1/4 cup granulated sugar	1/2 teaspoon salt
1 egg	1/3 cup seedless raisins
1/2 cup milk	2 teaspoons baking powder

Cream the butter and sugar together; add the honey, the egg, and then the milk and flour, in which the other dry ingredients have been sifted, a little at a time alternately. Last of all, add the raisins which have been steamed until tender.

Susie W. Merritt.

All measurements level.

IT was even more of a flow than we suspected, in our most suspicious mood—the honey flow this fall. Several local beekeepers extracted hundreds of pounds of autumn honey, which is very unusual here. "It has been the best fall flow I ever knew," writes one man of many years' experience. Every beekeeper smiles a satisfied smile when you mention it, unless you ask if maybe the queens might have been crowded some; then every one looks solemn and confides that that is the one thing to worry about. So we are all worrying together, quite merrily.

Fall offensive great success!

Wealth of booty won!

Armored aircraft bring us in
Heavy stores of Hon!

* * *

More than one kindly beekeeper has sent word that the plant mentioned on Page 608, October Gleanings, is Motherwort. Well, that was what we ourselves had several times tried to conclude, but always we evacuated that position when Gray's Botany opened up on us with the crushing statement that the Mint Family, to whose populous membership Motherwort (*Leonurus Cardiaca*) belongs, has "many seed-like nutlets (never prickly)." Well, if I know a "seed-like nutlet" when I see one, or a prickle when I feel one, the nutlets of *Leonurus Cardiaca* are prickly. But I'd much rather it would be Motherwort than anything else, because that was what I picked out first, from a certain gay little book that took no note of prickles. Can anyone reconcile them, the lore of the gravely detailed Botany and the prickly nutlets on my hollow-stemmed purple-flowering weed?

The famous Miss L. Cardiaca
Has nearly got into a pickle,
Because an old family tradition
Forbids her to carry a prickle.

* * *

With the Editor's kind permission, I want to say that those dreaming hours in the last stanza of the verse on page 672, October Gleanings, grew not "green" but "deep"—"Grew deep and still and full of balm"—says the copy. Colorful hours they were, to be sure, but that line didn't happen to say so, and on that particular day they were not green but a shimmery sort of blue and gold.

Old Winter's hours are gray or white,
The Spring's a pale green hue,
The summer hours are mingled flowers,
But autumn's gold and blue.

* * *

Letters on winter packing continue to drop in. May I quote extracts from a few? "I built up six strong swarms, for which I bought Italian queens. One I put in my new protection hive, the rest (except one) were

in 8-frame hives. The one exception, which we will call No. 6, was in a box made of $\frac{5}{8}$ -inch sides and $\frac{7}{8}$ -inch ends, same dimensions as an 8-frame hive.

No. 1 I set inside an old chaff hive. Three of the dovetail hives and the protection hive I lost before their brood all hatched. No. 1 lived till March, had two good flights and died. No. 6 is still living, and can almost crawl out of cracks at corners. Why did the one with the very least protection winter so well, while those best protected died?" I wish I knew, Mr. Bauches. There evidently was some factor so important that it nullified the protection in the one case and the lack of it in the other. Which proves nothing as to the value of packing except that it is not a cure-all. It is not the only, nor perhaps the most important requisite for good wintering. But good wintering itself is of prime importance.

* * *

H. D. Murry of Ladonia, Tex., writes thus: "I experimented a little last fall myself, packing a number of colonies in this way: First, I placed a full-depth super under the brood-chamber, the super being filled with empty combs. I tacked a piece of burlap on the bottom of a super and placed that on top of the brood-chamber, with some sticks laid across the frames to afford passageway for the bees above the combs. I filled the super with planer shavings and put on the cover. The entrances were contracted to about two inches in width with the usual $\frac{3}{8}$ -inch depth. Every colony so packed came thru the winter in perfect condition. My loss of colonies not packed was heavy."

This upward ventilation was what gave us such good results last winter, tho we had never put the empty combs under the brood-chamber. Mr. Murry continues: "I think the beekeepers of the country owe a great debt of gratitude to our friends at Washington for what they have accomplished in clearing up the wintering problem. But there are many of us who will never go to the expense of making winter cases. Most of us are willing to put on a super of planer shavings. I'm pinning my faith to that plan till I am shown something better for Southern beekeepers."

A good proportion of our own hives are in either two stories or a story and a half. That gives the bees a chance to cluster well away from the entrance. But Mr. Murry's letter strengthened my previous intention to raise some colonies over bodies of empty combs. The brood-chambers—O joy and O grief!—were utterly heavy. I was almost completely out of commission after thus raising two colonies. It seemed too bad to tear the brood-chambers apart on so late and so cool

a day, just to avoid lifting them complete, so that particular manipulation stopped right there. But not far from Nashville there is a beekeeper who—no, I'll wait. He is tackling the wintering problem too earnestly to have any incomplete reference made to his plans. "If a little work and expense, providing protection, will prevent a recurrence of last winter's losses," he says, "there won't be any more in my yard."

* * *

At the Fair, a young Williamson County beekeeper told me he was going to try out the winter case this fall. So, little by little, the trials are being made—the ticket being scratched, as it were; tho by far the overwhelming majority of Dixie bees remain unprotected—a traditional solid South.

* * *

October brought to our home very serious sickness, and then the "Great Release," so preventing our own bees from receiving the attention this fall that I had planned. When these grave things come into our lives, beekeeping does become a mere side line indeed. We still hope to do certain things; it will be later than Dr. Phillips advises, but perhaps he would say not too late, as November usually has much warm weather.

Probably, it has been because of this new sad experience that the thought has been with me so often of late that whatever our side lines, or even our so-called main lines, life itself and the living of it, the quality of the living of it, are the matters of our deepest concern. We call ourselves beekeepers or doctors or soldiers or pilots or laundresses; but after all, these words grow out of what we do, not out of what we are. I remember having once heard a brilliant young woman break out in impulsive indignation because some one said that she was a writer and her sister was a teacher and her friend was a bookkeeper. "Those things are not what we are!" she protested; "they're just the labels fastened on us while we do certain things. We are something so much more than that—we're women. And for that matter, we're something so much more than that—we're human beings." It is somewhat true that giving us labels classifies us like specimens, for the things these labels signify are the things wherein we differ. And those are really our side lines, however main linish they may sometimes appear. In the great curves of our lives we are very similar. We love and we aspire and we die. Babies and books and sunsets and wise old people and stars at night are precious things to all of us. We all revere holy thoughts and thrill to noble deeds, and we long to be ourselves both noble and holy. Courtesies and gracious manners go straight to our hearts; and one and all we are dreamers of high dreams and doers of what we hope are good deeds; and we all stand awed and uplifted in the presence of death. Truly beekeeping is but a side line, as are all pro-

fessions and occupations; only living is a main line.

And somehow today I feel no mood for side-line verses—nor, indeed, much mood for side liners themselves. So in the little verses that follow there are no bees at all. But is not all song, even that which only reaches out longingly toward the hem of Beauty's garment, and touches it not at all—is not all song of the very stuff of life?

* * *

CHRISTMAS DREAMS.

Christmas comes with all its dreams,
And I fold them one by one
To my heart until it seems
I have touched the stars and sun.

One dream is a great low star,
One a carol sweet and wild,
One a hill where shepherds are,
One a Mother and a Child;

Some are friendly dreams and near,
Stockings hanging by the fire,
Children's gallant shouts of cheer
When they find their hearts' desire;

Cities gay with crowds and light;
Folk who pass with noiseless feet,
Bundle-laden thru the night,
Down some dark and narrow street;

Soldiers in the far-off lands,
Under grey and leaden skies,
Home-sent letters in their hands
And the answers in their eyes;

Then the fairest dream of all
Glowes again and yet again,
While the ancient carols call
"Peace on earth, good-will to men!"

* * *

THE AMERICAN HOUSEWIFE'S SONG.

[PREFATORY COMMENT: If Mrs. Puerden will allow me, I should like to echo her enthusiastic pleas for food conservation. While this verse stresses wheat only, not only I but every loyal American housewife feels the same way about sugar, fats, or whatever food stuff is particularly needed—"lest dreams, too, die."]

I may not ride a snow-white steed
With silken banners flying,
Or charge a wall so grim and tall
With soldiers round me dying;
But I shall make my war-time bread
And find it good to eat;
With corn and rye and barley, I
Shall save my bit of wheat.

Dear Maid of France, our woman hearts
Have not forgot your story—
We fight today another way
With lesser light of glory;
For we at home must save them there,
And send them food to eat
Or they shall die, so gladly I
Give up my bit of wheat.

For dreams of righteousness on earth
Heroic blood is flowing.
Shall lack of bread betray the dead?
Nay—keep the wheat-ships going!
And if the need still greater grows
Of daily bread to eat,
Lest dreams, too, die—then know that I
Will give them all my wheat.



FROM NORTH, EAST, WEST AND SOUTH



In Northern California.—Altho fair weather prevailed during October, beekeepers were not benefited thereby. The month of September with its intermittent rains and cold weather definitely put out of commission our fall honey plants. Had October preceded September we would have had a very fair flow this fall. According to reports that have been received recently, I fear that not a few apiaries will be short of honey this winter and the following spring. September weather is responsible for the lack of stores, and, whether or not sugar will be available for spring feeding, we cannot as yet foretell. One of the members of the Central Valley Honey Producers' Co-operative Exchange is holding his honey crop for the express purpose of selling it for feeding purposes to members of the Exchange. It is dark honey and free from spores of American foul brood. Any member needing feed may address the secretary of the Exchange at Modesto. It might be mentioned here that last winter California lost thru starvation approximately 4,200 colonies.

Your correspondent has been requested to write a special article for Gleanings on bee-disease legislation. He hopes to be able to do this for the January issue. Unquestionably, this is an important and timely topic. Government statistics show that last year California suffered in summer losses thru disease (this does not include winter losses from all causes, which were nearly double the summer losses) over 11,000 colonies valued at over \$89,000. Furthermore, the rate of increase of summer losses thru disease from 1916 to 1917 shows a loss of 2,450 colonies valued at \$19,600. This indicates that our industry thru summer losses from disease alone is suffering a yearly increase in loss of nearly \$20,000, and that probably this loss, instead of remaining at about \$89,000 for the year 1918, will amount to \$109,000. When it is taken into consideration that our winter losses are almost double the summer losses and also the resultant loss of honey crop, it will be readily seen that the matter of an effective bee-disease law in the State is paramount for the protection of our industry. Our State Exchange will employ every means within its power to secure this much needed legislation.

The sugar requirements of soft-drink manufacturers on Nov. 1 were again cut in half, and the amount allotted now to such manufacturers is but one-fourth that used by them in normal times. This brings up the question of sugar substitutes which may be used in replacing a part of the sugar in the bottling of soft drinks. According to the U. S. Department of Agriculture, Bureau of Chemistry, the following sweetening agents can be substituted for sugar: corn syrup (ordinary glucose), corn sugar, maltose

syrup, honey, and high-grade refiner's syrup. It is interesting to note the relative sweetening powers (excepting refiner's syrup) of the above-mentioned products. They are as follows: ordinary sugar, 100; honey, 75; corn sugar, 45; maltose syrup, 30; corn syrup, 20. It is likewise interesting to note that the Bureau of Chemistry does not recognize saccharin as a substitute for sugar. It possesses no food value and has been shown to be actually deleterious to health. It might also be stated that saccharin cannot be legally used in foods in the State of California.

M. C. Richter.

Modesto, Calif.

* * *

In Southern California.—The Riverside District Fair or, as it was called this year, the Southern California Fair, was held at Riverside, Calif., Oct. 8-12. For several years the beekeepers of Riverside County have made very creditable displays at these fairs. This year a special effort was put forth to get as fine a display as possible. In order to stimulate interest and draw in exhibits from outside of this county, a prize of \$75 was offered for the best display of bees, bee-keeping appliances, etc., put up by a county club. A second prize of \$50 was also offered. Some very fine exhibits were made by the neighboring counties. (See picture of exhibit on page 739). A generous display of comb honey, extracted honey, and hundreds of pounds of beeswax were part of the attraction. Riverside and San Bernardino Counties each had a miniature apiary in its exhibit, Riverside County also having a miniature man uncapping and extracting honey. A genuine, old-fashioned "bee-gum" in the nature of a log cut from an oak tree, containing a swarm of bees in their native state, was one of San Bernardino County's special attractions. About 25 ways of putting up extracted honey were shown to the 30,000 people who visited the fair. The first prize of \$75 went to the Riverside County Club, and the second prize of \$50 went to the San Bernardino County Club. Each of these county clubs should be highly commended for the efforts put forth. Demonstrations were given daily in front of the grand stand by A. C. Carpenter of Fallbrook, San Diego County. His special demonstrations were in preparing bees, queens, and pound packages for shipment. The Kinzie brothers, each with his own exhibit, and E. J. Atchley, all had good displays. The Kinzie brothers, especially, vied with each other with very fine displays of hives, bees, appliances, honey, and wax, together with canned fruit, preserves, jellies, and cooked food sweetened with honey. They also had a wonderful exhibit of mounted California honey-producing plants. Charles Kinzie carried off the first prize on bees and queens, and the



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other prizes were quite equally divided between the two brothers.

Many apiarists have already moved their bees to the locations where they expect to winter and in the spring make orange honey. Where there are eucalyptus and pepper trees enough to justify it, this is perhaps all right. If the winter is mild like the last one, the bees will be able to get considerable nectar and pollen from these trees. In some localities the bees stored quite a bit of eucalyptus honey last winter and built up splendidly for the early honey flow. Generally speaking, the late honey flow over most of southern California, upon which beekeepers depend for the bees to fill up the hives for the winter, was almost a complete failure this year. Consequently, many apiaries are very short of stores and will need considerable attention, as well as great care in the selection of a location, in order to bring them safely thru the winter.

Beekeepers from Idaho and Utah are securing locations and preparing to ship bees to the orange groves of southern California for wintering. They expect to raise early queens and make as much increase as possible, besides making whatever orange honey they can. It now looks as tho there would be from five to ten carloads of bees brought in this winter from those parts of the country.

No more rain of any consequence has fallen since the last report, and conditions remain about the same. I have lately visited the Yucaipa and Cajon Pass districts. The sections lie at an elevation of from 3,000 to 4,000 feet and are along the higher mountain ranges. They are usually considered good for a honey flow until late in the fall. But this year, owing to the scarcity of summer rainfall along these mountain ranges, they have produced a very short honey crop.

The bee industry shows prosperity and many beekeepers are driving new automobiles, while others have invested in auto trucks to be used in their work.

Corona, Calif. L. L. Andrews.

* * *

In Iowa.—The beekeepers of Iowa have just closed the best annual meeting that the State Association has ever held. From the beginning of the first session there was not a dull moment. Two days and one evening were replete with addresses by some of the most competent experts in bee work and honey production. So intent on hearing every word and absorbing every thought was the audience, that even the pandemonium caused by the shrieking of sirens and whistles, and other noises, made when it was announced that the Germans had signed the Allies' armistice terms, did not influence the auditors to do anything more than shut out the uproar by closing the windows.

The Iowa Beekeepers' Association is now

one of the largest and best, having more than 500 members. Every Iowa beekeeper that is not a member is making a big mistake by not identifying himself with this best and most powerful agency to help him. Annual dues are 50 cents. The following officers have been elected for the coming year: Dr. A. F. Bonney of Buck Grove, president; Hamlin B. Miller of Marshalltown, vice president; Prof. F. Eric Millen of Ames, secretary-treasurer; E. G. Brown of Sargents Bluffs, F. E. Stacey of Iowa Falls, and L. W. Elmore of Fairfield, for board of directors.

Say, you county associations, subscribe for two or three sets of the bee journals and have a circulating library and see how it will help you thru many bee problems. No danger of any beekeeper becoming too old to learn. Look how young Dr. C. C. Miller is. He reads all of them, and then some. Keep your brains crowded with knowledge constantly creeping in, and there will be no danger of their rattling loose. Ask for the government reports. They are free to everybody interested enough to ask the Department for them.

Section honey is selling in Iowa as high as fifty cents per section. Oh, you fifteen-cents-a-section-two-for-a-quarter honey-producer. Did you help it, or are you still in blissful ignorance of the fact? Come out of it.

Marshalltown, Ia. Hamlin B. Miller.

* * *

In Minnesota.—The Farmers' and Home-Makers' Short Course will be held at the University Farm from Dec. 30 to Jan. 4 inclusive. Minnesota beekeepers should plan to attend the lectures and demonstrations that will be given in the beekeepers' section. A very interesting program has been planned, and it has been so arranged that those who are also interested in the poultry industry will be able to attend all the lectures on both subjects. This annual short course has been very helpful to many. The writer has in mind one who has between 60 and 70 colonies of bees and who has been successful from the beginning, because at the very first she attended the lectures given at the short course, which made it possible for her to avoid the mistakes so often made by the average beginner. This is one instance out of several that could be mentioned. Even if you have already made good progress in beekeeping, by attending this course you will find new inspiration and enthusiasm thru the exchange of plans and ideas. Prof. Francis Jager, chief of the Division of Bee Culture, is expected to be here and have charge of the course. He is now on his way home from the Balkans where he has been several months in charge of a Red Cross Agricultural unit in Serbia. At the beekeepers' conference, which will be held on Friday afternoon of the week, Frank S. Pool, sugar rep-



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representative of the Federal Food Administration for Minnesota, will speak on "Sugar for the Spring Feeding of Bees." The topic assigned to Dr. E. F. Phillips, "Beekeepers' Outlook and Duty for 1919," is of special interest. H. L. McMurry, special field agent, will speak on "Recent Investigations in Wintering Bees."

Bees are now in winter quarters or ought to be. Most of the bees in this State will be wintered in cellars. These cellars are of all kinds and descriptions. This makes it very hard to lay down hard and fast rules for cellar wintering. Watch the temperature and humidity. The temperature should not be allowed to go below 42, and even this may cause the bees to be uneasy and roar if the cellar is too damp. If necessary have a stove in the cellar which is connected with a chimney so that a fire can be started when the temperature goes too low.

Extracted honey is retailing in Minneapolis stores at \$3.50 per 10-pound pails and comb honey at 38 to 40 cents per box. Abundant fall rains give promise of a good stand of white clover for the coming season.

Minneapolis, Minn. Chas. D. Blaker.

* * *

In Michigan.—Applications for sugar still continue to arrive in considerable numbers. Many report that colonies that seemed to have had enough honey to last till spring, when examined in September, now do not have more than enough to last until Christmas. Many such colonies can be profitably wintered in the cellar where they can be fed with more certainty and convenience than when outdoors. Every possible colony should be nursed thru until spring, for bees will be scarce again as the losses of last winter have not been made up yet.

During a series of meetings held last winter the writer was surprised at the number of beekeepers who said that they kept the snow shoveled away from the fronts of the hives, because they were afraid that the bees would smother. This year, let us pile the snow around the colonies as much as possible and see if there is not a decided difference in favor of the snow packing, which nature furnishes in such abundance in some parts of our State. If the bees are not packed yet, do the packing with the very least disturbance of the colony; handle them so that the bees do not know that anything is being done. Bees that are to be wintered without protection should be protected from the winds with shocks of fodder or by some other means that will break the force of the wind and help to hold the snow.

Because of the epidemic of influenza, it was necessary to postpone the meeting of the Michigan Beekeepers' Association until January 21-23. This action was taken because of the advice of the Board of Health

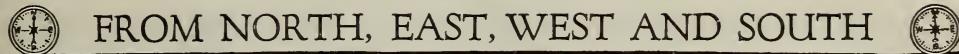
and because it was feared that the attendance would be cut down very greatly on account of the epidemic. The programs will not be mailed until about the first of January, as the additional time given will permit some desirable changes in the program.

Each of the county associations should arrange for a winter meeting sometime between now and the middle of February. The State association decided to ask the Legislature for an additional appropriation for the inspection work and is expecting the support of the county associations in this matter. In order to assist in this, each organization should hold a meeting and decide on a plan for securing the active support of the legislators from the various counties. Mr. Ewell, the Extension Agent in Beekeeping, is very anxious to attend as many of these meetings as possible. Counties which are not organized, but in which live beekeepers who are interested in having an organization, should write to the State Inspector of Apiaries, East Lansing, and some arrangements will be made for visiting the county and assisting in the work.

East Lansing, Mich. B. F. Kindig.

* * *

In Ontario.—In November Gleanings, mention was made of the of the cool September weather which hindered, to a very great extent, the extracting of the buckwheat honey. Judging by letters received from different States as well as other places here in Canada, a similar condition prevailed with many other beekeepers. In my case, I managed to get the honey extracted—that is, the most of it, for warm the honey as much as I liked, quite a lot of it was left in the combs. At the home yard, the honey was carried into the extracting-house one day late in the season, and, altho the day was quite warm, yet the honey could not be extracted, as the very cool night preceding had chilled it too much. Owing to lack of room this honey was left in the extracting-house for over a week before being hauled to the kitchen where we had arrangements made for heating the room thoroly. Imagine my surprise to find that during the week that the honey had been stored in the unheated building, large quantities had granulated in the combs, many sealed combs being almost solid. All was uneapped but many combs are full of this granulated honey—in the lot of combs handled about 3,000 pounds were extracted and I suppose at least 500 pounds are still in combs. These combs full of honey present quite a problem as to their disposal, but the worst feature, as I see it, is the possibility of honey just like this granulating in the brood-nests later on during cold weather and causing heavy losses of bees. Last fall I saved out many combs of honey for fall feeding, and after I was thru winter preparation quite a lot were still left on hand. Al-



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tho they were off the hives for some weeks, yet when I warmed them up the honey extracted all right with no signs of granulation present. Why the difference I cannot understand; but I feel sure it does not augur well for the bees that have large quantities of this same honey for winter stores, as many of our colonies have this fall, the buckwheat flow having been good. This leads me to remark again that while honey for winter stores is often all right here in our cold climate, unfortunately **too often** it is not all right, and for our wintering conditions unquestionably the safest of all winter food for the cold months is syrup made from granulated sugar. A certain editor some time ago stated that the writer of these notes had expressed contrary opinions to the foregoing at some unstated time; but, needless to say, there is some mistake and some one else must have been in mind. Since keeping bees I have always made the emphatic claim and proved it by experience—much of it costly experience—that sugar syrup was far more dependable one year with another, than taking chances with honey stored in August and September.

As to sugar, of course the obtaining of this necessary product was quite a problem this fall. I found it difficult to get much granulated, and, acting on the advice of some good beekeepers whom I consulted, I fed a large quantity of raw sugar, known as Jamaica Crystals, at the north yards where I had no buckwheat, and brood-nests were light this fall. While it is now too late to make any effort to make things different provided I have made a big mistake, yet I would be glad to hear from others who may have tried this sugar in former years. Some of it has been sent out to various beekeepers by the Provincial apiarist by way of experimenting, so, no doubt, next spring we will know more about how it turns out. If it does not prove a good winter food, undoubtedly I will be hit hard, as my son and I have 200 colonies in our best clover location, practically depending on this sugar for winter stores. This particular lot of sugar fed to these bees was a very fine sample as compared with much other raw sugar that came under my notice, the crystals being quite light in color and well defined.

"When to put bees in the cellar," as the caption goes in November Gleanings, interests me for the first time in my beekeeping experience. Why? Simply because this fall for the first time my son and I have quite a large apiary to be wintered inside. To complicate the problem these bees are over 70 miles away from our home, and when I bid them good-bye in October after seeing that all were good and heavy for winter, it was with the expectation that I would not see them again till next spring, assuming, of course, that I live till then. The friend who lives on the farm where the

bees are, has placed the bees in the cellar for a number of years, and, naturally, I assume that he can do the job as well or better than I can. Then, again, it would cost me as much to go to the place as would pay him well for his work and at the same time allow him to hire a man to help him; and last, but **not least**, "yours truly" will be saved a lot of back-breaking work. As we get older we find it easier to shift off some of the heavy work on others when convenient to do so, and when such an arrangement can be made that is mutually agreeable to all concerned, needless to say, when I happen to be one of the parties getting out of work—I am **always agreeable**. As to "when" to put them in the cellar, of course, that is the question that is bothering me, but I think it best to hold off till near the end of November anyway, all depending upon what the weather is like in the meantime.

Markham, Ont.

J. L. Byer.

In Texas.—The matter of good queens in every hive is receiving more attention in Texas today than it ever has before. However, there are yet far too many beekeepers who do not study this matter. There are some who are saying now that every colony should be requeened every year. This, it would seem to me, is rather too broad a statement. Each colony should be carefully studied as an individual, and then in its relation to the whole and to the average. For years live-stock men have urged individual tests on cows, and poultry men have sought individual tests on hens, to show that some are not paying for their keep. Queens produced side by side from the same parent stock will not develop the same abilities in adult life. Many can not conceive that individuality in such exists just as in cows or hens. One of the most successful beekeepers in this State knows at the end of the year what every queen has done. If she has not come up to the standard he has set, she is replaced by another. In the same way, a good queen is left with a colony as long as she comes up to the standard, be that two or three years. This same beekeeper is gradually raising the standard for his queens, farther above the average each year toward the best queen. The outcome of this careful study and painstaking labor is wonderfully shown in the results obtained. Why can not others do as well? The answer lies with them.

Reports continue to arrive telling of improved conditions over much of the important beekeeping territory. In south Texas bees went into the winter in better shape than for five years past. Every colony was well stocked with young bees, and ample stores were in the hive. In several localities a good surplus was harvested during the



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fall flow, after two seasons of almost total failure. In southwest Texas conditions have improved greatly in practically every locality. In only one locality did the bees go into winter with short stores. In west Texas the fall rains revived the native vegetation to such an extent that most bees gathered ample stores. In north Texas the fall flow from cotton was the best for years. In one locality an extra extracting was possible from cotton flow. Generally speaking, the fall weather did much to revive the bee-keeping industry, which certainly did suffer during the two past years. The indications now seem to point to conditions assuming normal.

The Extension Service of the A. & M. College thru its specialist in apiculture, H. B. Parks, is carrying on a very extensive campaign in east Texas. The results of this work, which is hardly more than under headway, are very pleasing. In practically every county Mr. Parks has found much unorganized interest in beekeeping. Naturally, the methods are not always modern, but a desire to adopt proper methods has been found in every instance. Several counties are being organized by Mr. Parks, with an idea to remove all box hives and prepare the way for inspection service with its quarantine regulations. Bee clubs among the boys have been organized in two counties, and it is expected to meet the increased demand for this work.

The Texas Apiary Inspection Service now has two former inspectors in the service. M. C. Stearns of McCollough County is now in the army, and H. A. Jones of Live Oak County is now in training camp.

Honey adulteration was the subject of a recent editorial. That subject is certainly very seldom heard among the beekeepers of this State. Among commercial beekeepers there is never a thought of adulterating honey. There has been too much effort to get the universal use of honey, for them to attempt to put other than the best of pure honey on market. F. B. Paddock.

College Station, Tex.

* * *

In Florida.—There is very little news of interest from Florida beekeepers this month. A fair crop of fall honey has been gathered and some is being shipped. Many of the large producers are holding their crops—not for higher prices but for increase and to care for the needs of the bees in case a freeze should cut off the orange bloom next spring. Pennyroyal is already in bloom in south Florida, but all reports agree that it does not yield much nectar until after Christmas. In this part of Florida we have some pennyroyal, but it appears to be a different variety, being found only around the scrubs; whereas in

the southern part of the State it is a "flatwoods" growth. Here the bloom does not open until the middle of January.

At this time it seems appropriate to warn the Northern beekeepers against selling their bees and coming to Florida with the idea that they can start apiaries and make big crops of honey with little effort. The local newspapers have from time to time given remarkable accounts of the profits made by beekeepers in Florida, but upon investigation it will be found that the writers are quite incompetent to give any information that is of value or in any way representative of conditions in commercial beekeeping. One article, given prominence in a local paper, stated that \$30 could be made from a hive of bees, with no expense and practically no attention, and the impression was given that beekeeping was a get-rich-quick business. Upon inquiry we find that this writer owns just one colony, and he is situated on a location which could not possibly support more than 25 colonies in a good season. An isolated colony almost always produces more than the average of a big yard, just as there are always odd colonies that produce much more than others in the same yard. My record shows that my best colony has given me 362 lbs. this year, but to state that that amount can be expected from every hive would be nonsense. It must be remembered that this has been an exceptionally good year for honey in Florida, and we have made more than in the last four years put together. Last year there was practically no honey produced in this part of Florida, and the loss of bees by starvation was heavy. Beemen intending to locate in this State should investigate thoroly, and even then it will be difficult to find a good location unless previous experience has taught the recognition of our honey flora. After this year's bountiful harvest, difficulty will be found in buying bees, for no one is willing to sell and all are making preparations to increase the size of their apiaries and occupy all favorable locations. New beginners there are by the hundreds, and, should next year prove as successful as this year, bees will be as plentiful as mosquitoes. The chances are even that next year may give us a crop failure, and in that case most of the beginners will drop out or be bought out by those already well established.

It is to be hoped that all beemen have read the editorials in the August and October Gleanings on packing honey. There have been such heavy losses in transportation from Florida that the Food Administration has thought it necessary to issue a bulletin on the subject, which will be forwarded to all interested. At this time of writing, Nov. 3, this bulletin is not completed, but it will be issued in about 10 days.

Apopka, Fla.

Harry Hewitt

HEADS OF GRAIN FROM DIFFERENT FIELDS

Bees Can Delay Hatching.

I believe may be easily proved. In my nursery hive I have placed a comb of eggs, freshly laid, and these have not hatched in a week or 10 days, or at all, until I have given each cell a small supply of royal jelly thinned with new honey; they then hatched, and, when given to the bees, were fed and capped over as usual. The temperature of this hive is 95 degrees, and I have placed in it an artificial queen-cell containing a day-old grub, fed it with royal jelly, transferred it to an old used queen-cell, and, in due time, a perfect queen has emerged, altho not sealed up.

I raised a frame of queen-cells this summer on the Doolittle system. A rather unusual thing about them, apart from their fine size, is that they were started and finished in one super, above a laying queen, and every one was accepted, which is rather

that bees can delay the hatching of eggs,

uncommon. They were from a queen which I got last summer. She was 34 days in the mails, and yet she and the workers arrived brisk and lively, none dead, and not half their candy consumed, which speaks well for their stamina and the way they were packed.

We are quite unable to keep black bees here, owing to 'Isle of Wight' disease, as they go under without a struggle; whilst the Italians, even if they contract it, will throw it off with help from the owner.

Sheffield, England. G. Barratt.

Can Bees Hear—Who Knows?

As long ago as in 1876, there were several articles in the American Bee Journal in regard to the above, and if I am correct the matter has more or less been discussed thru our own journal in years past. The article mentioned was from J. D. Kruschke, now of Berkeley, Cal. He



The exhibit that took first prize at the Southern California District Fair, held at Riverside, Calif., Oct. 8 to 12. The picture tells how handsome and complete this exhibit was, but does not show the information concerning beekeeping and honey that was given out by expert beekeepers constantly in attendance at the exhibit. Beekeepers in other parts of the country might well follow the example of the Riverside County Beekeeping Club in popularizing honey. There is no better advertising of honey than such an exhibition as this.

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just writes an interesting letter in regard to it, but it is too long for publication. He thinks some genius of the present day ought to be able to make an instrument that would produce the proper sound to call a swarm of bees from running away. I suppose our readers are well aware, at least the older ones, that in days gone by we used to have a turkey call that would call wild turkeys from quite a distance away, and birds and animals of different kinds have been called by expert woodsmen by imitating the peculiar noises they make. Can any one give us information in regard to this interesting matter?

A. I. Root.

Medina, O.



Uses Water in Cleaning Frames.

I want to tell you how I manage to get my extracting frames cleaned as fast as I extract them. I put them back onto the hives, but before doing so I saturate the comb well with water. Sometimes some of the cells are half filled with water. At this time of the year bees are gathering lots of water and this puts it right into the hive just when they want it and saves them taking in just so much water. If you put the frames back onto the hives at night, the next day you will find your combs all cleaned, and the honey that was sticking to the combs nicely stored in the bottom of the cells.

Wm. Craig.

Aitkin, Minn.



Is Not Troubled by Drifting.

I read much about bees drifting when packed in multiple winter cases. For the past two years I have been packing some bees in two-colony cases, and have not experienced any trouble from drifting. But I have always fastened a six-inch board vertically in the middle of the front of the winter case between the two entrances. As bees seem to invariably know right from left, this plan, I believe, prevents drifting. This season I have taken a further precaution and have painted the one side of the front a different color from the rest of the case.

R. D. Hiatt,

Deputy State Inspector.

Columbus, O.



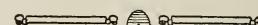
Simple Wax-Rendering Outfit.

As many small bee-keepers have more or less old combs and cappings to render occasionally but not sufficient to warrant purchasing a wax press and other accessories, I would like to suggest a very efficient and cheap way of doing this work. The only utensils necessary are a pail or wash-boiler, a dipper, and a butter-tub, having a hole bored in it near the bottom, with a plug, or,

better, a faucet to draw off the excess water. Tie the combs in a bag and put in the boiler with plenty of water to boil. Have a dasher such as is used in the old-fashioned stone churn, and when the water boils keep pressing on the bag of combs, squeezing out the water and melted wax. When the wax accumulates at the top dip it into the tub. By drawing off the excess water from the tub and returning it to the boiler, little heat is lost; and by continuing the pressing on the bag of combs and skimming the wax off the top, in a surprisingly short time there will be little wax left to come to the top. As thoro a job may be done in this way as with a press, and, if the tub is well covered when finished and left in a warm room to cool, a nice cake of yellow wax will result.

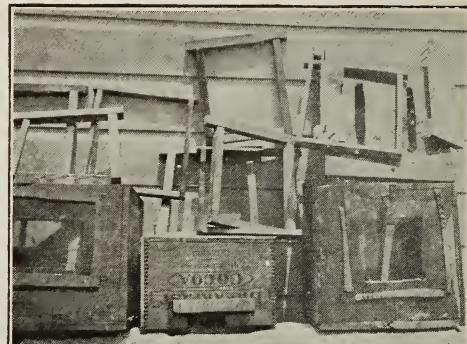
Rochester, N. Y.

A. G. Dye.



Keeping Bees and Bee Keeping —

Below are two pictures —one shows the three box-hive homes of some bees, and the other shows the modern movable-frame homes of the same bees. The



Equipment of a man who "kept bees."



Equipment of men who are beekeepers.

three box hives were bought by us from a first-class mechanic. Take a look at those frames! Wasn't that a fine job for a me-

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chanie! He told us that he took from them last year three "hives" (as he called them), and got 17 lbs. of honey. We bought those three boxes of bees June 8, and transferred them into three modern hives having drawn combs and gave each one of them a queen of the best Italian stock. From June 8 to Sept. 18 of this year they made us 114 lbs. of extracted honey per colony, which sold at 23 cents a pound, making an average income per colony of \$24.15. That is the difference between keeping bees and beekeeping.

C. Klabuhn & Sons.

Conneaut, O.

How Stingless Bees Perform.

As a source of possible interest I have purchased four colonies of stingless bees. The natives find these wild bees in hollow trees, from which they cut about one yard of limb or tree body, leaving the entrance in the center. Both ends are then covered with mud and the small log hung in the shade. After purchasing, I transferred to ten-frame hives, and during the process discovered that in each colony the combs were all in a horizontal position, five or six on top of each other, being supported by little wax pillars and

having a $\frac{3}{8}$ -inch space between the combs. There were no empty cells, but all of the eggs and larvae were sealed in the cells, the eggs being laid in pollen and sealed immediately. The queen is larger than an Italian, but has very small wings and can not fly. These bees are good workers. All in between the frames of the hives that I gave them they built quantities of cups about 1 inch in diameter and $1\frac{1}{4}$ inches in height, and filled these with honey.

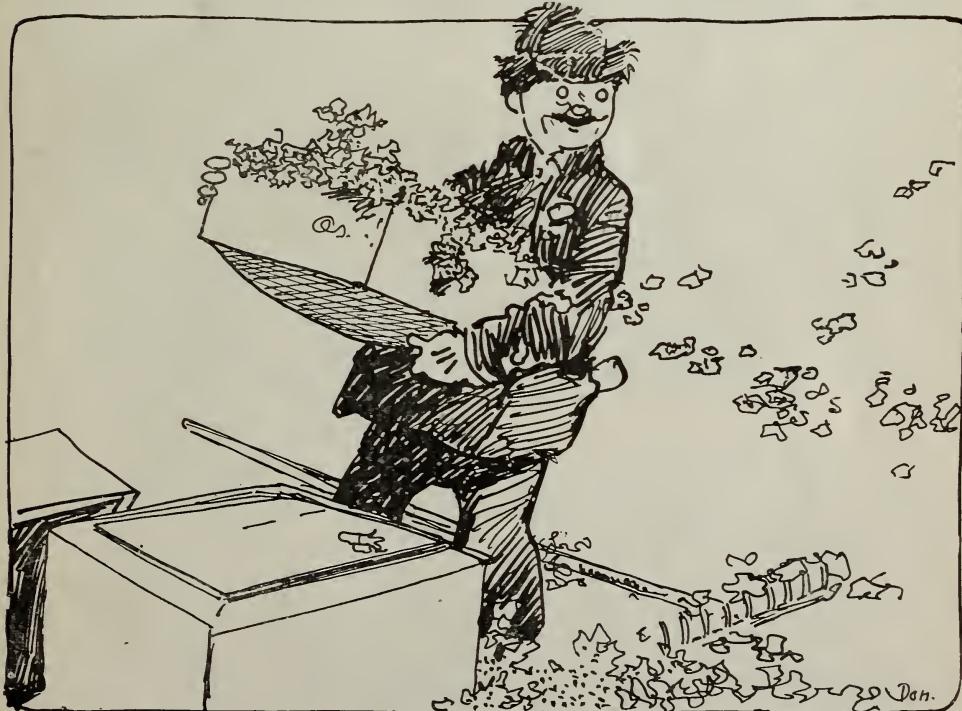
Enrique Bahr.

San Pedro, Honduras.

Can Anybody Answer This?

Has any one invented a dependable contrivance for watering bees on the desert? Here in the West there are many fine locations for apiaries, so far as pasture is concerned, but no dependable water supply. Some sort of metal tank holding three or four barrels of water with a safe and sure device for permitting a small quantity to escape at a time would fill the bill and permit an extension of out-apiaries to many waterless localities. Has any one hit on a device?

W. E. Woodruff.
Cottonwood, Ariz.



THE BACKLOT BUZZER.

Benny Sourweed, who quit chickens for bees, says he'll never go back to poultry. Benny says with the price of honey this fall, he can do all the cacklin' and crowin' himself.

AD V A N T A G E S of Large Hives," by C. P. Dadant, in November "American Bee Journal," is an article of much interest. It is

there stated that Charles Dadant began supporting the large hives in 1868 when he found a box-hive beekeeper who had a colony he had kept for more than 30 years. The colony was remarkably large and the hive had a capacity of about two bushels. In studying the matter, Charles Dadant learned that there had already been three advocates of the large hive, Debeauvoys, Langstroth, and Quinby. He found this striking statement by Langstroth: "A good swarm of bees put, in a good season, into a diminutive hive, may be compared to a powerful team of horses harnessed to a baby-wagon, or a noble fall of water wasted in turning a petty water-wheel." Soon coming to see that the prolificness of the queen should determine the hive size, Charles Dadant began experimenting on the necessary capacity of a suitable brood-chamber. These experiments he also reinforced by calculations. Finding that a good queen could lay an average of 3,500 eggs daily in the active season, and considering that a good hive should accommodate the breeding of a good queen for 21 days at least, he estimated that 75,500 cells would be needed for brood in the breeding season. Also 20 per cent of the breeding room would be needed for stores of honey and pollen, thus making requisite 90,000 cells. For several years following 1815, there was much discussion concerning large hives, and in about 1900 the A. I. Root Co. put out the ten-frame Jumbo hive, the frames being the same length as the Langstroth and the same depth as the Quinby, and having a capacity of over 95,000 worker-cells. This in our country was called the "Jumbo" hive and in Europe the "Dadant-Root" hive. To the above review we are pleased to add that considerable credit is certainly due the Dadants for so long holding before the public the value of large hives.

* * *

INTENSIVE BEEKEEPING.

"Trial of an Intensive System of Bee-keeping," by F. W. L. Sladen, C. E. F., Ottawa, appears in the Canadian Horticulturist and Beekeeper for October. This last season he tried the plan of dividing his ten-frame brood-chambers into two parts, each containing five combs. He did this by means of a thin frame covered on both sides with wire cloth, giving a queen-cell to each part. A portico fixed to the front of the hive provided the two sides with separate entrances nine inches apart. He continues as follows:

Two weak colonies in a ten-frame hive separated by the wire-cloth division were wintered in the

cellar in 1917-'18. They were found to cover $2\frac{1}{2}$ and 3 combs respectively on April 25. The last week in May, about the middle of the honey flow from dandelion, the stronger one was transferred to a separate hive.

Both colonies built up strong in time for the clover flow which commenced on June 25. The weaker one was fed a pound of thin syrup a day during the honey dearth that followed the dandelion flow. This colony, treated as explained below, gave 220 pounds of honey and an increase of one colony. The other colony was not fed at this time, and gave 260 pounds of honey with no increase. The total yield of the double colony was, therefore, 480 pounds. The first colony was helped by the feeding; the second by the fact that they were hybrids. The average yield of the other colonies in the apiary was 176 pounds.

This system supplies a method of increasing bees without sacrificing the honey crop, each colony becoming two. Where no increase is desired, one of these colonies may be placed over the other at the beginning of the honey flow. A larger crop will result. It also provides a surplus of young fertile queens without the trouble of forming nuclei, and, if desired, without even raising the queens artificially, because excellent queens may be raised from two-day-old larvae that may be found in swarm-cells at the time the queen is caged. Indeed, it has been found advantageous to delay treating a colony until its preparations for swarming have advanced to about this stage, ascertained by weekly examinations.

In the same article he tells of making spring increase in the following manner:

A strong colony covering six combs on April 25 was removed to a new stand on May 20 and a purchased fertile queen introduced to the bees that returned to a new hive placed on the old stand in which one of the combs of brood with the adhering bees had been put. The result was 356 pounds of surplus honey and an increase of two colonies, including the division made.

This plan of increase has been also reported by others, the last being Ira D. Bartlett, who lately made us a visit at Medina. He has used this method for fall increase, but inserted no brood in the hive, and considered it quite unnecessary. The colonies built up well; but peculiar conditions in his locality caused him finally to discard the plan. On cold days great numbers of the bees, young as well as old, fly from their hives never to return. One fall in three days he thus lost almost one-half of his bees. He believes, however, that in many localities this plan, even in the fall, would be quite successful.

* * *

APIARY BOUNDARIES IN NEW ZEALAND.

Trouble has arisen in New Zealand concerning the question of apiary boundaries, 700 colonies having been recently located in the Thames and Te Aroha districts in different spots, some within half a mile of other apiaries. The editor of the New Zealand Beekeepers' Journal, October, while he deplorers this condition, feels it is useless to ask for legislation on the subject. He claims

that such cases are rare, and but few people are affected. He also says that beekeepers would have difficulty in defining the limits of their bee pasturage. Charles F. Horn, in a letter to the editor, rightly insists that such encroachment can and should be stopped. He speaks of the moral injustice and economic waste of labor and capital, and argues that the difficulty of tackling the matter is no greater than that of miners' rights, which has already been settled by law.

* * *

SHORTAGE OF BEES AND HONEY IN EUROPE.

The demand for bees and honey in many parts of the European continent is now tremendous. This, according to the American Bee Journal for October, has resulted in such high prices (44½ cents in 100-pound lots, and in some cases as high as 61 cents in retail packages) that the vice-president of the Grocers' Syndicate of France has asked the state to fix the price on honey, and has urged the grocers to boycott the beekeepers. The beekeepers are protesting against this, asserting a shortage of sugar and of bees and beekeepers is the cause of the high prices. Compared with 1914, no more than 40 per cent of the colonies of France are now in existence; and since it is impossible to obtain sugar for feeding, there would be a still greater loss the coming winter, probably cutting the 40 per cent down to 25. It has been estimated that in Brittany alone there will be tens of thousands destroyed during October and November.

* * *

IS THERE LESS DANGER OF STARVING IN LARGE HIVES?

The following question and answer appear in the American Bee Journal for November:

Question.—"Is a ten-frame hive better than an eight-frame hive? If so, why?"

Answer.—"The large hive is generally preferred, one important reason being that there is less danger of bees starving in winter."

Dr. Miller is so invariably right that it takes a good deal of courage to question any of his statements. However, altho we prefer the ten-frame hive and could name several good reasons for this preference, wintering would not be among them. We believe there is not only more danger of the colony on ten frames starving, but also more danger of their freezing. During very cold winters we have known medium colonies on ten frames to starve with plenty of stores at the sides of the hive, the bees having evidently been too cold to reach the honey. Had the hive space been smaller it would have been much easier to keep up the temperature, and less stores would have been needed. In the case of the eight-frame hive, or the ten-frame contracted to eight-frame, the colony may be left with the necessary clustering-space, and still have 35 or more pounds of honey. Good colonies, if suitably packed, will winter on even seven frames, which we have repeatedly proved with hundreds of colonies.

THE TWO PERILS, DYSENTERY AND THE WEATHER.

Under the head of "Two Perils, Dysentery and the Weather," in October British Bee Journal we find there discussed the interdependence of disease and weather. It is pointed out that, tho recoveries from disease have been attributed to various chemicals, the weather probably has had a large part in such cures. When colonies are subjected to cold damp weather, their vitality is so impaired that they are quite liable to infection. The statement is also made that, even in the absence of infection, cold and dampness have killed many colonies supposed to have been suffering from the Isle of Wight disease. The writer believes that the four factors—cold, wet, starvation, and malnutrition—which predispose to infection in the case of human diseases, may also be equally potent causes of bee diseases.

* * *

DO SWARMS RECCGNIZE THEIR OWN BROOD?

In speaking of preventing new swarms from absconding, the editor of Western Honey Bee of September, 1918, says, "In putting in a frame of brood you must either take it from another colony, which weakens that colony just that much, or else from the old hive, and I am inclined to think that the recognition of their own brood by the newly-hived swarm tends to make them dissatisfied, especially when hived on the old stand."

(Does anyone know that bees recognize their own brood from that of any other hive?)

* * *

DOES GASOLINE KILL FOUL BROOD GERMS?

In reply to the question, "Is it true that gasoline will kill foul-brood germs?" The Western Honeybee, September, in an editorial, replies: "Certainly. Years of experience have proved that gasoline is one of the best disinfectants."

We know of no scientific authority that would recommend gasoline alone. Yet, if a match were touched to it, it would probably be effective. Any one who has disinfected hives by painting with gasoline, and has had no recurrence of the disease, would doubtless have had the same results had he painted the hives with water.

* * *

C. W. Aeppler, November American Bee Journal, states that the number of colonies in Switzerland during the last 17 years has diminished by 16 per cent, and the number of beekeepers by 30 per cent. In speaking of the Swiss government fixing the price of honey to the consumer, he says it is probably the first time in history that any government has done this. The price is now fixed at the rate of 64 cents a pound.

* * *

"The British Board of Agriculture and Fisheries has appointed a committee to study the life habits of the honeybee with the object of improving the conditions under which beekeeping is carried on in England

and Wales, and to investigate the epidemic diseases of the bee, more especially the disease or group of diseases which pass under the name of "Isle of Wight."—American Bee Journal, October, 1918.

* * *

E. G. LeStourgeon, October Beekeepers' Item, believes that if the Texas beekeepers would winter in one story with a good wind-break, contracted entrance, hives facing south or southeast, and earth piled about the hive to prevent winds from circulating under them, the 24 per cent loss of last winter would be greatly reduced, and the bees would use 30 per cent less stores than last winter.

* * *

Joseph C. Scott, American Bee Journal for November, tells of losing brood in the South from some unknown cause. At first the unsealed larvae turned purplish. It then died, turned white, and, if not removed, became black and had somewhat the appearance of foul brood. He believes this was caused by the juice of fermenting, rotting fruit.

* * *

Texas has a foul-brood law that requires an inspection certificate to accompany all shipments of honey and aparian products. Since combs from box hives can not be inspected, this law, if enforced, will soon eliminate the box hive from the State, according to E. G. LeStourgeon, in the Beekeepers' Item for October.

* * *

In the October Canadian Horticulturist and Beekeeper is the following:

"Do not put weak colonies away for the winter. They consume more stores, so valuable now, than strong ones, and even then are more likely to die."

This is a little misleading. It would be nearer correct to say that these weak colonies consume more stores **in comparison to their size** than strong colonies.

* * *

Under the subject of transferring, September Western Honeybee suggests that, if possible, the side of the old box should be removed so as to get at the sides, not the ends, of the combs. This is a good point usually overlooked in discussions on transferring.

* * *

Morley Pettit, in the October Canadian Horticulturist and Beekeeper, estimates that Ontario alone produces annually 10,000 tons of honey. He further states that, aside from Quebec, the other provinces have their honey resources practically untouched.

* * *

The editor in the October New Zealand Beekeepers' Journal says it has been estimated that in a good year a colony consumes from 200 to 600 pounds of honey, and he believes that an average amount might be conservatively placed at 400 pounds.

* * *

It is in The Domestic Beekeeper for November that we learn that unless the edi-

tor's colonies in government four-colony winter cases, winter in better condition than they have for the last four winters, all such cases in his yards will be discarded in favor of tarred paper cases. Altho we have heard excellent reports from many, we too feel that the quadruple case has been somewhat disappointing.

* * *

Arthur C. Miller, in November American Bee Journal, says in his opinion the current belief that queens raised under the swarming impulse transmit the swarming tendency to their progeny, is quite erroneous. He considers such queens among the best and says after using thousands of "swarming cells" he has never yet been able to detect any sign of inheritance of the swarming impulse. In fact, while using such cells he has, during late years, reduced swarming to less than two per cent of his colonies.

* * *

Even in as warm a State as Texas we find an advocate of the small entrance. Frank Talbot, in the Beekeepers' Item for October, recommends an opening $\frac{3}{8}$ by 4 inches. In this same connection we call attention to the fact that Colon P. Campbell (President Michigan Beekeepers' Association) in November Domestic Beekeeper contracts the entrances only $\frac{3}{8}$ of an inch by the full width of the hive.

* * *

C. S. Enab, in the October Beekeepers' Item, reports that the Western Honey Producers of Sioux City, Iowa., have been eliminating the box hive from their locality, in some cases by persuasion or buying, and in others by running such apiaries on shares.

* * *

In the September Western Honey Bee the editor says he uses two drawn combs instead of brood to hold new swarms, for in case young brood is used and the colony is dissatisfied, the bees build queen-cells and soon leave.

* * *

E. G. Ward, in the August New Zealand Beekeepers' Journal, states that, on opening a hive, he rarely smokes the bees at the entrance, as he considers it does more harm than good.

* * *

"Any colony that goes into the winter with a first-class queen will come thru in much the best condition."—Prof. F. B. Paddock in Beekeepers' Item, October.

* * *

Under the heading, "Let Us Be Honest," British Bee Journal, is the statement that the "reputed pound" or 14-ounce bottles should be eliminated.

* * *

A temporary windbreak of surplus supers placed in pairs of piles is being tried out by Louis H. Scholl, as stated in the Beekeepers' Item for October.

THE annual meeting of the Minnesota Beekeepers' Association will be held in the Club Room of the West Hotel at Minneapolis, Dec. 4 and 5. A

very excellent program has been prepared. Among the features of this program are: A preliminary report on Michigan bee-culture survey, giving distribution of bees and beekeepers in Minnesota, by L. V. France; discussion of queens purchased for members of the Minnesota Beekeepers' Association thru the Association; discussion of wintering problems and insulation, occupying the afternoon of the first day's session; a discussion of vitamines by Profs. R. M. Washburn and R. A. Dutcher; the bee-disease situation in Minnesota by Chas. D. Blaker; bee culture at state fairs by B. F. Kindig and C. B. Stravs; the honey-manufacture question by C. P. Dadant; bee culture and the war, by Major Francis Jager. The program clearly indicates that Minnesota beekeepers are very much awake and quite up-to-date.

* * *

The 18th annual meeting of the Illinois State Beekeepers' Association will be held in the Sun Parlor of the Leland Hotel at Springfield on Dec. 17 and 18. Among the prominent beemen to be present will be Morley Pettit of Ontario; N. E. France of Platteville, Wis.; F. Eric Millen, State Apiarist of Iowa; Editor C. P. Dadant of the American Bee Journal. This Association now has 400 members. A program of the forthcoming annual meeting may be secured of Jas. A. Stone, Secretary, R. F. D. No. 2, Farmingdale, Ill.

* * *

From reports received from beekeepers and from bee-supply manufacturers throughout the country, there is every indication that there will be an unusual demand for bees, queens, and all kinds of beekeepers' supplies next year. The interest in beekeeping was never keener nor more general in this country than at the present time.

* * *

The New York State Beekeepers' meeting will be held on Dec. 3 and 4 at the Hotel Statler, Buffalo, N. Y. F. Greiner, Naples, N. Y., is secretary, of whom more details of the forthcoming meeting may be learned.

* * *

The Eastern New York Beekeepers' Association will hold its annual meeting at the Court House in Albany, N. Y., on Tuesday, December 10. S. Davenport, Indian Fields, N. Y., is secretary.

* * *

The Chicago-Northwestern Beekeepers' Association meeting, to have been held at the Great Northern Hotel, Chicago, on Dec. 10 and 11, has been postponed because of the influenza epidemic still prevailing.

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JUST NEWS

Editors

Under date of Nov. 19, the Bureau of Markets, U. S. Dept. of Agriculture, says: "Imports of honey from Mexico and West Indies to be permitted at

least until Jan. 1 under licenses to be issued by the War Trade Board." Such imports have been prohibited for the last six months. A considerable amount of West Indian honey has already arrived in New York under permission of the new regulation. As soon as shipping space can be secured Europe will take every pound of West Indian honey obtainable.

* * *

As before intimated in these columns, Prof. Burton N. Gates of the Massachusetts Agricultural College at Amherst, Mass., has been appointed Professor of Beekeeping at the Ontario Agricultural College at Guelph, Ont. He is also made Provincial Apiarist for the Province of Ontario, and as a part of his duties will be secretary of the Ontario Beekeepers' Association. These duties began Sept. 1.

Prof. Gates' official title in his work at the Massachusetts Agricultural College was that of "Collaborator, Apicultural Investigations, Associate Professor of Beekeeping, Massachusetts Agricultural College." In closing a post card sent out to the beekeepers of Massachusetts under date of Sept. 24, giving directions how to prepare for wintering bees, Prof. Gates said in closing: "During the past eight years the writer has enjoyed his work with and the continued co-operation of the beekeepers. In resigning the beekeeping work in Massachusetts, he wishes them the fullest success."

* * *

"A great deal of honey that has been shipped for export during the last three or four years has been bought by brokers who know nothing about honey. The sellers realized this, and no doubt saw how easy it would be to adulterate and not get caught. After the goods are on the steamer and they have secured their money from the bank, there is very little chance of getting into trouble. Hence certain Jewish firms have gone into this business of adulteration and selling at cut prices. They usually make up some sort of an excuse to explain the reason for the cut price, as in this case, needing the money for some other proposition. It will be necessary for some one to notify the authorities to be on the lookout for these fellows. Otherwise, all the good work that has been done in the past 25 years towards gaining the confidence of the consumers that extracted honey is pure, will all be wasted. We do not think that there is much of it being done, but it should be stopped before it goes too far."—Special report to Gleanings from New York Correspondent.

QUESTION.—I have a quantity of last year's honey, some of it candied in the comb. Would it be safe to feed it to the bees for winter stores or would it be better to feed it, if at all, in the spring?

Pennsylvania.

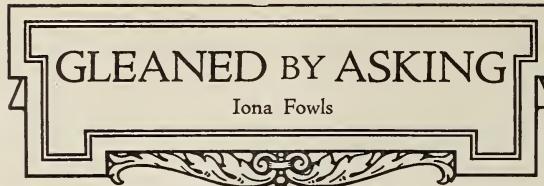
Answer.—The combs of candied honey would not be suitable for winter stores. In order to get such honey out of the combs it would be necessary for the bees to use quite a good deal of water, and, of course, they are unable to obtain this during the winter months. It would, therefore, be better to wait until next spring. At that time remove the cappings, lay the combs flat in the bottom of some container, and pour water on them from a height; then place the combs, while wet, in the hive for the bees to clean out.

Questions.—(1) Is the following a good method of making comb foundation? Cut a piece of screen wire the size and shape wanted. Dip in melted wax. If so, is it not especially good for brood-frames? (2) What is the best way to unite two or three colonies in the fall? (3) How close is it advisable to set hives? (4) If one wishes to requeen, how would it do to kill the old queen and let the bees get another from worker brood in the hive?

Missouri. Roscoe Mawson.

Answers.—(1) Using screen wire for the base of foundation would not be satisfactory, since the holes are four-sided instead of hexagonal. The bees would be apt to build the combs crisscross or any way they desired. (2) Two or three colonies may easily be united in the fall by doing the work along toward night and alternating the combs, giving the colonies or nuclei a good smoking at the same time. If the work is done in the daytime, about the best plan is to use the queen-excluder and one thickness of newspaper immediately above the brood-chamber and then set the queenless colony over this. In a few hours' time the bees will gnaw thru the paper, and the two colonies unite peaceably. (3) The hives may be placed within a few inches of each other; but there is more danger that the queens may be lost when they leave the hives to be mated, and there is also more or less drifting of bees from one hive to another. We think it is a better plan to put the hives five or six feet apart if one has sufficient room, and also to have them face alternately south and east. (4) One may requeen the way you suggest by killing the old queen and allowing the bees to raise another from the brood already in the hive; but except at the height of the honey flow one would be apt not to get as good a queen. More than this, there are certain times in the season when this would be a distinct disadvantage. For instance, immediately before the honey flow one would not wish to be without brood so long, as these bees are necessary in order that the colony may be built up in time for

Emma V. Biles.



sirable that new bees be raised in order that the colonies may go into winter quarters in good condition.

Question.—Do late-reared queens always lay soon after becoming fertile? I had several queens this fall that looked like fertile ones, but they did not lay.

Michigan.

C. E. Halsted.

Answer.—Sometimes late-reared queens do not lay until the following spring. However, you would probably have been able to get these queens to lay in the fall, if you had fed them slowly for a time, for perhaps a week or so.

Question.—I have four colonies, each consisting of about 4 frames of bees. How would this plan of doubling up work? Remove the cover from the first hive, and place on top two queen-excluding boards; then next the second hive and its cover; then pack one foot of straw around and over the top of the whole business. With such a plan the bees would tolerate both queens, would they not? Would the usual entrance slide provide enough air, or would it be necessary to bore a hole in the upper hive?

Ralph Gaston.

Pennsylvania.

Answer.—To bore a hole in the upper hive would not be necessary, and would be apt to cause a draft. Since the nuclei are so small, we hardly think your plan a good one, for the heat from the lower hive would rise to the upper one, and the lower nucleus would have extremely hard work to keep warm enough. It would be better to have both nuclei in the lower hive separated by a thin wooden dummy or division-board. We have known such nuclei to be wintered successfully separated by a double screen division-board but have never tried this latter plan ourselves, and should fear it would be a much cooler arrangement. Ordinarily we would say the best thing to do with those two nuclei would be to unite them or else winter them in a good cellar; for, of course, small colonies can be wintered successfully in the cellar if the conditions are right.

Questions.—(1) I have five 10-frame hives that are very full of honey. If I pack bees so they will use only a small amount this winter, will there be enough brood-comb next spring for bees to raise plenty of brood? How can I remedy this? (2) How can I tell honeydew? If it is not desirable for winter stores, should it not be removed?

Ohio.

Charles Case.

Answers.—(1) The object of contracting the brood-chamber is simply to give smaller space to heat during the winter. Bees would, it is true, use more stores during the winter if they had a larger space to heat than if they had a small one; but we would hardly say that the contraction would result in the consumption of only a small amount of their usual stores. In the spring, as the

flow. Also in late summer or early fall it is a poor plan to kill the queen and leave the colony for some time queenless, for at that time of year is it de-

bees appear to be crowded so that the queen needs more room for laying, the combs that have been removed in the fall may then be replaced. (2) It is usually easy to tell honeydew from its rank flavor and also its cloudy appearance. It is not desirable for winter stores; and if there is any great quantity of it, it should be removed and better stores given. If there is only a small amount, it might be well to feed 10 pounds of good sugar syrup on top of this honeydew. If this is done the bees will probably not get down to the honeydew till next spring, when they will be able to have plenty of good flights, and the honeydew would do them no harm.

Question.—I should like to ask your opinion as to the location of my bees. I have them at the south end of a good honey-pasture which is good for about two miles north. Three miles south of here there is also good pasture. I was wondering if it would not pay me to move my bees half way between.

R. C. Carter.

Florida.

Answer.—Bees often go three or more miles for nectar; and yet from your description we believe it would not pay you to move between these two localities, for the bees certainly do better if the pasturage is very near than if it is at a distance. Why not divide your apiary and move part of it into each of these two pastures?

Question.—How is the State of Florida, and particularly the section 12 miles east of Tampa (high pine land), "Dixie estates," for an apiary and the raising of honey? Is the honey from citrus-fruit blossoms of good quality? Do the bees work all the year in that climate? I should also be glad of any other information you may care to give.

New York City.

A. Hutchinson.

Answer.—The region 12 miles east of Tampa is not particularly noted for the production of honey. You will get honey, however, from the citrus groves, and the honey is of the very finest quality. You will also secure some from gallberry and saw-palmetto. If the apiary in question is near some bay or inlet, you will be able to get some mangrove honey. We would advise apiaries not larger than 25 or 30 colonies to the yard, putting the yards four or five miles apart. Unless there are hard roads or bays or inlets in the vicinity, it would be difficult to move bees, as the sand is rather deep, making it hard for an automobile to traverse.

Question.—Please inform me whether the plan of winter protection in the Rockies as illustrated in the October Gleanings would be good to use in Pennsylvania.

J. R. Megargee.

Pennsylvania.

Answer.—The plan of wintering given by Wesley Foster could be practiced with profit in your State, if a space intervenes between the ground and the packing. If the packing reaches clear from the hive to the ground, it would absorb dampness and probably result in moldy combs. In Colorado the ground is very dry, so that no harm is done by placing the packing on the ground as Mr. Foster suggests.

Question.—Would it be safe to feed bees combs of honey that have been fumigated with bisulphide of carbon to kill moths, if such combs have been aired out several days after the carbon was used?

Nebraska. C. W. Farington.

Answer.—This honey would not injure either bees or people.

Question.—An apiary of 75 colonies is located in the midst of a large fruit-tree section. How far from the apiary can the orchardist expect as complete pollination as he can within 80 rods of the apiary?

A. B. Cook.

California.

Answer.—This would vary in different seasons and different localities. In a climate where the spring is often so cold that the bees do not get a chance for flight except only a few days during fruit bloom, you can see that the conditions would be quite different from those in your own locality. Therefore, for a general answer, we would say that at a greater distance than 80 rods you could not expect as complete pollination as you could within that distance of the apiary, altho during very warm weather this would not hold. Here at Medina we have known of some fruit trees only a few rods apart. The one nearest the apiary would be completely pollinated so that the fruit was heavy on the tree, and great quantities of it had to be picked in order that the remaining fruit might mature, while only a short distance from this tree were others that were not pollinated nearly so well. We have had reports, also, of orchards in which the trees immediately surrounding the hives would hang full of fruit, while those around the edges would be in striking contrast.

Question.—Please let me know what per cent of queens introduced by the Miller smoke method are accepted. Do you practice this method now? If so, do you always find the old queen first?

Kentucky. Claude W. Wilson.

Answer.—We can not tell you what per cent of the queens introduced by the Miller smoke method are accepted, for it depends so much upon weather conditions and the honey flow. For best results the old queen should be killed before introducing the new one, altho many have reported introducing without removing the old one. In such a case you could not be certain that the new queen would be accepted. Probably the poorer of the two queens would be killed. We are not using this method in our apiaries at present, but are introducing with the Miller cages and also with the Thompson cage, which was described on page 463 of Gleanings for August. Sometimes when we are in a hurry we also introduce by simply running a virgin in at the entrance.

Question.—What is the noise one sometimes hears when going thru a colony of bees—the noise a deep bass note somewhat resembling the cooing of a pigeon. I have been told by a very prominent bee-keeper that it is the signal for the destruction of the drones; but I have heard it at almost all times.

England. G. Barratt.

Answer.—We do not know to what you refer unless it be to the quahking of the queens.

"**A**BOU T three years ago I sent for a sample package of the yellow and white sweet clover seed, and the first year of its maturity I

gathered 18 pounds of seed. I seeded some alongside the garden and the creek and in the alfalfa field on a separate piece of ground, and I have 50 pounds of seed gathered this season. Our stock, horses, and cows eat it with delight, and my bees gathered lots of honey in spite of the drouth we had again this season, which lasted from the last day of March until Aug. 5."—Mrs. Margaret Green, Washington County, Ida.

"An old beekeeper tells me that I can feed my bees ground oats this winter as sugar can not be had, and I could not afford it anyway. How about the oats?"—Wiley W. Smith, Wythe County, Va.

"I should have requeened this fall but there was no use of buying new queens, for I couldn't find the old ones, as they are too black and too shy for me, and no one nearer than 40 miles that I know of that could find such black queens."—A. I. Marston, Ida County, Ia.

"Middle south Florida is one of the best honey fields in the State, both as for quality and quantity. I have 140 stands of bees; no disease; never feed; gather some honey every month; swarm in September; took 20 gallons from one stand and made three divisions."—N. J. Thompson, Polk County, Fla.

"The Klabuhn Brothers in Gleanings advise to buy the bees, hives, tools, and all beekeeping equipment of neighbor beekeepers who keep only a few hives or gums and so neglect them that they have disease. Can some one tell me what to do with the small beekeepers here that will not sell and will not improve their beekeeping?"—Ralph Hall, Stone County, Ark.

"Colonies in this region located exclusively in orchards did poorly. Nearly all our orchards are cherries and prunes, which are never sprayed with arsenate as apple trees are. The wasp is one of the bee pests with which we have to contend. We bait him, using a wire flytrap in which is placed a small piece of salmon. In this locality we do not seem to need the winter protection discussed in Gleanings. For instance, I have found that colonies wintered under a low shed closed on three sides but entirely open to the east came out in fine condition in the spring. The east is the direction from which we seldom have any wind. My bees remain in this shed the year around."—J. W. Beckley, Marion County, Ore.

"This season in Australia is an exceptionally good one for honey. Thousands of

BEES, MEN AND THINGS

(You may find it here)

tons are being produced. Myself and brother have 40 colonies, and up to the present have harvested about 5,500 pounds and expect 3,000 more. Our sea-

sions here are very irregular. One in four will be a grand honey season. Of the other three, two will be good and one almost a failure. Our beekeepers are becoming more modern in their method and are working their apiaries on the good American system, and it is becoming a big industry, especially as people are beginning to find out the value of honey as a food."—Percy Sweetman, N. S. W.

"With the temperature at 88 in the shade and bees working furiously in goldenrod, it hardly seems like the last day of October, does it? If the weather remains good, I shall probably get a super of honey from each of my colonies yet this fall from the goldenrod, which is abundant."—F. G. Berner, Orange County, Fla., Oct. 31.

"The retail price of the aluminum combs is 55 cents each, f. o. b. California, which includes the frame itself nailed and wired with four vertical wires. I have used only two of the frames this season as an experiment and have found the bees take to them readily both for honey and brood. I now have a cluster of bees on these frames for wintering and will watch results."—M. R. Delahay, Howard County, Md.

"If I were back to young days (I am now 73 years old), I would immediately figure on making beekeeping my principal and sole occupation. In the 10 years just past, while studying the bees' habits and management, I have learned to love them dearly despite the few stings given me mostly in the early years of my acquaintance before I had learned that by proper care and judicious handling stinging would be almost entirely eliminated."—E. E. Cohen, Waupaca County, Wis.

"About July 1 the bees began to let up on bringing in honey and scarcely got enough to feed themselves. At that time the small miller swarmed by the millions over all the alfalfa and clover. I could see no reason why the bloom did not still produce nectar, and my only solution of the situation was that the millers beat the bees to it, they being scattered over the fields night and day. About July 24 we had a terrific storm which nearly destroyed all the millers; and the bees got very busy again and kept it up until about Aug. 15 when they began to slow up on account of cold days. Our crop ran from 40 to 75 pounds per colony."—C. E. Crowfoot, Logan County, Colo.

"Items noticed in 1918: That in some seasons 8-frame hives are better than 10-

frame for honey production, and season of 1918 with us was one of them; that bees working on onion blossoms got dopy, stupefied and seemingly lost all control of themselves; that reports from locations five miles apart indicate the average bee does not travel five miles; that buyers are willing to pay \$7.00 to \$7.50 per case of 24 sections of good section honey, and that honey-producers are as much sought after by dealers as voters are by politicians; that while there is a pronounced tendency toward 10-frame hives, still can hardly accept the Editor's opinion that the 8-frames are in the discard."—E. J. Ladd, Multnomah County, Ore.

"Mr. Kleckler has undertaken beekeeping on a scientific scale. Among other things he has adopted the improved method of extracting the honey, which effectually eliminates the poison resulting from bee stings on the honeycomb and which has brought the extracted product into greater popularity. The previous methods employed created some prejudice against the extracted product because of the poisons which occasionally found their way into it."—Hartford Day Spring, Hartford, Mich. [A newspaper's beekeeping wisdom.—Editor.]

"I live in the city and keep three colonies in my back yard. I gave them a great deal of attention this year and was repaid for my efforts by taking off over 400 sections of beautiful honey. We have had no trouble disposing of it at 35 cents a pound, or three for \$1.00. My daughter, 10 years old, is applying the entire income to the purchase of Thrift and War Savings Stamps. I enjoy the work immensely."—Lester B. Johns, Montgomery County, Ohio.

"It is my opinion that honey will never reach the low level in price that it did when I sold out several years ago. On account of the scarcity of sugar, scores of thousands of people have learned to use honey who never thought of it before."—E. M. Gibson, Carbon County, Utah.

"Have had a very bad year owing to drouth and severe late cold in spring. However, a splendid flow has been on for the past three weeks, and I hope to extract a fair crop within the next few days."—I. D. Bailey, Orleans County, La.

"Season just closed very successful one with me. Got more than 10,000 lbs. choice extracted honey from 70 stands, spring count, with about 25 per cent increase and lots of good stores for winter."—Archie Blackburn, Rush County, Wis.

"In a Sunday-school talk a short time ago about the industry of the bees from which I drew a lesson, I stirred up a good deal of interest in bee culture and the prospect of a 'Bee Club' is the result."—M. M. Robertson, Warren County, Miss.

"Have had splendid luck with bees and fruit this season."—Wm. A. Ayers, Wyoming County, Pa.

"We have had an abundance of rain all the fall. Flowers are out and bees are swarming some. Have the brood-chambers full and one super full of amber honey. I have been keeping the bees since 1884 and never saw a fall flow anything like this one. If it should stay warm as it is now, the bees will fill another super in 10 days. This locality is as near perfection as can be if it continues warm. We are selling some honey to customers at 25 cents a pound."—M. B. Talley, Victoria County, Texas.

"The present year has been the best for queens in my experience for 13 years. I had to refuse orders for thousands of queens and was about a week behind most of the time in filling orders, altho I was on the jump every minute. It was necessary to give queen-rearing colonies stimulating feed thru July and August, as we were eight weeks without rain during those months."—J. H. Haughey, Berrien County, Mich.

"Seeing your article in the September issue on pound packages of bees, page 531, I wish to say that I consider it very important that all packages of bees while en route be screened from the light. The ordinary wire one-pound cages are objectionable because the bees worry themselves in trying to get out."—G. Guyer, Port Hammond, B. C.

"I bought a leather-colored queen of you about 17 years ago that I had for six years. I clipped her wings and at one time I had 70 colonies queenened from her stock, and after she died I kept her in a small bottle until she dried down to almost nothing."—A. N. Cooke, Knox County, Ills., in a personal letter to A. I. Root.

"We had 350 colonies last spring, increased to 500, and produced \$6,500 worth of honey—12 tons of extracted and 4 tons of comb. This enabled me to take a \$1,000 Liberty Bond, for I wanted Uncle Sam to take good care of the boys."—M. A. Gill, Cache County, Utah.

"As bee study is being introduced in a mild form in the local training college here, I have been asked to give demonstrations and to assist in bee advice. I am greatly interested in introducing the American bee-keeping system here."—T. E. Wise, Cradock, C. P., So. Africa.

"This season I have had sweet-clover plants of the old variety in my garden 12 feet in height. The bees have feasted all day long on them."—D. F. Tyson, Vancouver, B. C.

"Very poor prospects for next year here. The white and alsike clover are in poor condition, having had only one rain in two months. Will have to feed my bees next spring."—L. J. Bergh, Dane County, Wis.

"A colony of bees is worth \$30.00 in Denmark. Honey in Serbia is bringing \$1.00 a pound."—Francis Jager, U. S. Red Cross representative in Serbia.

I HAVE repeatedly said, during the years that are past, that when our Government would break loose from the liquor-traffic, the war would come to an end; and during these severe struggles during recent times I have been more and more impressed that our first

text, "If I regard iniquity in my heart, the Lord will not hear me," can be applied, and was intended to apply, to *nations* as well as to individuals. In all these years since our own Civil war, our own country has been "cherishing iniquity" by consenting to receive "revenue" from the liquor-traffic. It has seemed to me that it was duplicating on a large scale what some of our policemen have been doing in letting the saloon-keeper go on with his hellish traffic if he would give the policeman a certain sum of money every month; or, if you choose, as has recently been brought to light, where a woman of the street paid "hush money" to the police, once in so often, for turning their heads the other way when plying her trade. This is putting it pretty strongly, I know; but is it not true? The brewers and saloon-keepers are just now, as I write, wasting their money (at least I hope they are wasting it) by putting liquor advertisements in periodicals that will accept them, telling that our Government is going to lose—I forget how many millions—by cutting off the revenue that has been helping (?) to keep things going for so many years, by shutting down not only the distilleries but the breweries as well. Why, a recent advertisement in one of our city dailies had the audacity to claim that the city could not pay the *teachers* of the *schools* the raise in their salaries that they really ought to have consistent with the times unless they have the revenue from the saloon-keepers and brewers. Did you ever? The idea that all the schools and colleges, and I am not sure but the advertisement mentioned churches also, can not be kept up without the help of the traffic in *beer!* Well, just now we can praise the Lord because our Government has decreed that the breweries shall



If I regard iniquity in my heart, the Lord will not hear me.—PSALMS 66:18.

Righteousness exalteth a nation; but sin is a reproach to any people.—PROV. 14:34.

We have made a covenant with death, and with hell are we at agreement; when the overflowing scourge shall pass thru, it shall not come unto us; for we have made lies our refuge, and under falsehood have we hid ourselves.—ISAIAH 28:15.

be closed up December 1, 1918. Some of the said brewers in the nearby city of Cleveland are making a pitiful protest. Among other things, one brewer declared that he has just put in some new up-to-date and very expensive machinery, and this is going to be a dead loss if there is no pros-

pect of the ban being lifted very soon. How did it happen that he went ahead and put in said machinery at such a time as this? Election day is just before us. The cutting off of the breweries and distilleries is the result of vigorous protests from the people of our nation; and I feel sure that more vigorous protests are going to be the result of this coming election. It just now begins to transpire as never before that the voice of the people is going to rule; and, thank the Lord, there are more good people in our land just now than the vicious and the bad. Yes, praise the Lord, I think I may safely go further and say there are more good people in the *whole wide world*, than vicious and bad. This war has brought about an awakening and a stirring-up; and not only China, but even poor wicked Germany is beginning to consider our second text—"Righteousness exalteth a nation; but sin is a reproach to any people."

Now where does our strange third text come in—"We have made a covenant with death, and with hell are we at agreement," etc.? Years ago I used this same text and applied it to a single individual—a deluded, good-for-nothing person—a man who can best be described by the second verse in the fortieth Psalm: "He brought me up also out of a horrible pit, out of the miry clay, and set my feet on a rock." Well, it just occurred to me a few days ago that this other strange passage might also refer to a *nation* as well as individual. I hunted it up in my Bible, and went into Huber's private office and asked for his attention a minute. Then I read it to him out of the Bible. He started up in surprise and said something like this:

"Why, father, where in the world did

you find that passage in the Bible? It describes Germany just now to a dot."

Now, my good friends whose eyes rest on these pages, I want you to read that passage over and over again. Is it not indeed true that Germany *has* made "a covenant with death?" and good authorities tell us that Germany has spent years and years in making this covenant; and she has not hesitated—at least she does not hesitate *now*—to declare, "With hell are we at agreement." And then she seems to imply, certainly by *actions* if not by words, that "when the overflowing scourge shall pass thru it shall not come unto us." But, praise the Lord, at the very moment while I write she is disappointed, because the overflowing scourge has finally reached her—the scourge of the good people of the whole wide world. Now, if Germany ever tries to give a reason, what other reason, or what better reason, *can* she give than the concluding words of this text—"For we have made lies our refuge," and "under falsehoods have we hid ourselves."

At this very moment our good President is calling attention to the fact that, while Germany offers a partial if not complete "unconditional surrender," she has been sinking our vessels; and not only that, but firing on boatloads of helpless women and children in their attempt to get to a place of safety. And this last trick of the U-boats, if we are correctly informed, was to torpedo the vessel without giving the passengers a single minute to get into the life-boats and save their lives; and not only that, her armies in the French and Belgian territory are destroying towns and cities by the wholesale. When they find that they are conquered, instead of retreating in the way conquered people have retreated ever since the world began, she is destroying churches, libraries, etc., that were the result of the accumulation of many years, and I might almost say centuries—books that can never be duplicated—just because of an insane desire to wreck and ruin everything pure and holy. Retaliation has been suggested. Some of the papers advise telling Germany that if she keeps on in this work, when our soldiers get across the line the valuable buildings and other forms of property in Germany will be destroyed in like manner. While I can hardly blame people for making this sort of threat I can not feel that it is the right and proper thing for *Christians* to do. There is trouble enough and enough loss of property and life already.

I think it was just a few days ago we had an account of a German soldier who was near death. He was calling piteously

for a drink of water. Two young American boys were passing near him, and, altho every minute of their time was urgently needed to give a drink of water to our own suffering and dying people, this boy could not resist the appeal from a dying man. He gave him the full contents of his own canteen. Did this German soldier thank him? I will tell you what he did. Under the invigorating influence of the *drink of water*, he roused up enough to shoot this poor boy, who died instantly as the reward for giving a drink to one whom he supposed to be a dying man. Is this a type of Germany? I can not think for a moment that it is. It is a type of those who have been ruling Germany, and a type of the pupils, at least some of them, they have sent to war.

Let me now digress a little in closing. For years past, Germany has been receiving the credit of being progressive. A large part of our Christian people, and I am sorry to say considerable numbers of our ministers of the gospel, have been listening to the teachings of Germany. They called it "higher criticism." You know all about it. I will give you just one illustration. A minister of the gospel in good standing, supposed to be thoroly orthodox, suggested in a men's Bible class on Sunday that it was *possible* that no such persons as Adam and Eve ever lived. Maybe you have heard such talk. When it was repeated in my hearing I replied, "Why not go a little further and say that '*possibly*,' Abraham, Isaac, and Jacob never lived—that it was only symbolic?" And then I added (please remember this was years ago), "If you will go to the editor of our Medina *Gazette* he will fall right in with you, and also add that it is not unlikely that even the *Lord Jesus Christ* never had an existence. He will tell you it was all a tradition without any foundation."

I do not think I need waste any more time in considering Germany's higher criticism, or, if you choose, Germany's "*Kultur*." It has got the "discard" so severely that she will never be quoted again.

Just one more illustration of that comes to mind just now. Some forty years ago the editor of this same Medina *Gazette* announced that a distinguished geologist, who had contributed largely to the columns of a certain scientific magazine, would address a Medina audience. In telling of the discoveries that had been made in regard to Bible teachings, and with the teachings of science, he made some slurring remarks in regard to the Christian religion. I am sorry to say that at that time there were quite a good many "advanced-science"

people in our community, and they cheered at this skeptical talk. But there happened to be in the audience a well-read, up-to-date, minister of the gospel. About this time he rose up and asked to have a word. He asked the German professor with the high-sounding name a few questions. The professor tried to answer, but got into deep water; and finally got mad and used such words that his audience hissed him down.

Just recently some celebrated German professor gave some lectures in some of our eastern cities and had several prominent articles published in our leading magazines in defense of the use of alcoholic stimulants. Many good people were for a time deluded by his sophistry; but that was before the war time. Nobody now, would take stock in any preacher or a professor recently from Germany. In fact, unless things have the stamp of "Not made in Germany" nobody would think of buying at any price.

The *Scientific American* and some others of our leading journals have been discussing the matter of what we shall do with Germany when the war is ended. First and foremost, Germany must offer an unconditional surrender. I hope and pray that before these lines are before you such will be the case. In that same 28th chapter of Isaiah there is one more verse which I wish to quote, as follows:

"Your covenant with death shall be annulled, and your agreement with hell shall not stand; when the overflowing scourge shall pass thru, then ye shall be trodden down by it."

When we were boys and killed a snake, especially one that we regarded as venomous, we used to pound that snake a long time after we supposed it was dead. Shall we do the same thing with Germany in revenge for her awful cruelties and atrocities? God forbid. Shall we not, rather, remember those wonderful words uttered by our dying Savior—"Father, forgive them, for they know not what they do"?

COLD GREENHOUSES, OR GREENHOUSES WITHOUT ARTIFICIAL HEAT.

On reaching my Medina home, April 19, I was both pleased and astonished to see the collection of beautiful plants in the little greenhouse belonging to one of my daughters. My first expression, almost, was in regard to the wonderful health and vigor that every plant seemed to show—splendid color, no trace of wilting or injury from either cold or frost, and not an unhealthy specimen in the whole greenhouse.

When I asked if it was not a little too cool for tomato plants she replied, "Father, I have found that plants do better by keeping the greenhouse rather cool; and another thing, we have no insects of any sort where we do not let it get too warm when the sun is away up." And then I observed a large door that was kept wide open into the spacious basement or cellar. The result was that the plants did not get chilled during frosty nights, and also that the greenhouse seldom became too warm in the middle of the day, because the air from that large basement was constantly changing place with the air in the greenhouse. Of course, during a large part of the day the ventilators were down; but her success was mainly due to keeping the greenhouse rather cool all the time. Then I remembered that Eugene Davis told me years ago that he had the best success with lettuce in greenhouses when he kept the temperature just about right for working in his shirt-sleeves. And then I also recalled that Peter Henderson, years ago, suggested building a greenhouse with slatted floor, and a large deep cellar under it. Such a greenhouse in a locality where it is not too cold in winter, or in almost any locality, along during the spring can be made to give splendid results without any heating arrangements at all.

SWEET CLOVER ONCE MORE; SOMETHING STILL MORE ENCOURAGING.

We clip the following from a recent issue of the *Rural New-Yorker*:

SWEET CLOVER FOR PASTURE.

I am interested in sweet clover for pasture. How long can it be counted on for permanent pasture if kept fed off? and will it do well on clay soil that is not well drained?

U. S.
Elmira, N. Y.

Sweet clover is a biennial, and the roots rot in the soil at the end of two years. As a pasture it will be a perennial if allowed to go to seed each year, which it naturally will do in a pasture lot, and in that case you will have good grazing every year. A sweet-clover pasture will take care of two animals per acre if the soil is good, while no other grass will support more than one to every two acres. Your soil is just like mine, and I think clay is the ideal soil for sweet clover. After years of experience I claim that neither alfalfa, the clovers, soy beans, vetch, or any other legume, is in the same class with sweet clover, either as pasture, hay, or as a soil renovator. If the following rules are followed you will make a grand success of sweet clover, and if not, in nine cases out of ten you will fail.

Sow only unhulled seed at the rate of 20 or 25 lbs. per acre. Sow on disked land, preferably land that was previously in a hoed crop, or grain stubble, between Nov. 1 and March 1, without a nurse crop, and the next September you will get as good a crop of the best hay in the world as you ever raised on that land. If for pasture the new seeding should not be grazed until it is six inches high, about June 1. If you sow on sod, plow it before Nov. 1, and then disk and sow in November, rolling it in. Hull-

ed or scarified seed must be sown in the spring, and generally dry weather takes it before it is large enough to withstand a drouth. If sown in November or before March 1 it will have growth enough by May 1 to stand any weather—but only unhulled northern seed must be used. A. BLOOMINGDALE.

The above puts the value of sweet clover for stock rather strongly; but it may be all right. I should say 20 to 25 lbs. of seed to the acre is more than is needed; but for unhulled seed it may be all right; and the direction for sowing it from Nov. 1 to March 1 is not exactly what I should advise; but, unfortunately, the writer does not tell where he lives. I do wish every writer for agricultural periodicals would tell where he lives and when he wrote. It is especially important that he give his county and state, even if he does not give his address. Some time ago we had a crop of sweet clover that was cut for seed; but it was rained on so many times that we feared the seed was unfit to send out; but after being hulled and scarified we sowed it in our cornfield last summer, 1917, and this summer also, after the last cultivating, and both times it came up so thick it seemed as if every grain must have germinated. As sweet-clover seed is now quoted in catalogs and daily papers among other clovers, and is on sale at almost every seedstore, we have discontinued offering it. It is certainly very refreshing to me to see that it is now quoted side by side as of equal importance with the other clovers. The writer of the above, as you will notice, puts it *ahead of all the other clovers*, not even excepting alfalfa.

SWEET CLOVER—THE BIGGEST STORY OF ALL.

We clip the following from *The Rural New Yorker*:

SWEET CLOVER ON STUMP LAND.

We have urged our readers to try sweet clover, and have printed some true stories about the work this plant can do. Now comes a report from Oregon, vouched for by reliable men. There is much stump land in the Pacific Coast country. It is usually good soil, but the cost of clearing and stumping is so great that it will hardly pay as a business proposition. Near Grant's Pass a new plan was tried out in handling this kind of land. The stumps will largely decay in about five years, and the problem was to make these years productive if possible. The plan was to seed sweet clover after burning the land over and then using the place for pasture. Here is the story as sent us:

Having a lot of this kind of land to clear at Winona ranch, and not wishing to waste the use of it for a long time, we tried the sweet-clover method of clearing. We had four acres slashed, the timber and brush cut and left on the ground just as it fell, in the spring and early summer of 1915. This cost us \$8 an acre by contract.

In November of that year we burned over this slashing, getting a good clean burn with a fairly deep layer of ashes. In the following February, between the first and the fifth, we sowed five pounds per acre of scarified white-sweet-clover seed on the ashes among the stumps, which were so thick that

it would have been absolutely impossible to harrow or disk or work the ground in any way whatsoever. We simply sowed the seed broadcast with an ordinary Cahoon seeder.

In every place where there was a good layer of ashes the sweet clover came up splendidly, every seed apparently growing, while where there was little or no ash layer the stand was poor or lacking. In this case the ash was good on about 90 per cent of the land; and we got a fine stand on 90 per cent of the four acres therefore.

The following season, from February 1, 1917, on thru the spring, summer, and fall we pastured seven head of milch cows and an average of three head of horses, mules, and other stock on this piece of sweet clover, with no other feed from May 1 on, except 25 pounds of shorts per day to the herd of milch cows.

The cows kept in splendid condition, as did the other stock; and the cows in milk averaged 900 pounds of milk per cow per month straight thru. These cows, registered Holsteins, gave a return of \$12.80 per cow per month net for their sweet-clover pasture in butter fat and skim milk, after deducting the labor charge of \$3.70 per cow per month.

Meanwhile the sweet clover is growing as fast as the stock eat it, and is seeding heavily in spite of the strenuous pasturing. It grew to a height of 10 feet in places, and the cattle ate it down again to about a foot high, at which height it now keeps growing out and branching.

Besides the excellent returns in milk from this pasture among the stumps, the sweet clover is improving the land steadily by taking nitrogen from the air and putting it into the ground as all legumes do, and also by adding humus to the ground thru the decay of its root after the second year. Also the stumps are rotting out, thus greatly reducing the cost of final clearing of the land to probably ten or fifteen dollars per acre instead of sixty, as it would have been originally.

The cost of getting the land into sweet clover, including slashing, burning, seed, and sowing, was about \$10 per acre; while the net returns in the second crop year were well over \$50 per acre at the most conservative figure.

Nothing is said in the above clipping about bees. Surely they were on hand. We take it the ashes were from hard-wood timber.

THE ELECTRIC WINDMILL FOR THE POULTRY-KEEPER.

Years ago there was talk about lighting up the henhouse by means of lanterns or electricity in order to get more eggs. But I shall have to confess that I paid very little attention to it because I thought it was contrary to nature, or some new fad that would soon be forgotten. And I do not know but I was right in regard to the latter part of it, as it did seem to be forgotten; but you may be sure I was both startled and surprised to find an article on this subject in the *Rural New Yorker* of April 6. I give right here a clipping consisting of the first paragraph of that article entitled "Extending Daylight for the Hen." If you are keeping chickens to any extent, I think you will send at once to the *Rural* people for the number containing the whole article.

Publicity is now being given to a method of increasing winter egg production that has shown marvelous results in the hands of a considerable number of experimentors and commercial poultrymen. In fact, so remarkable are the results so far obtained we may soon expect to see in the city dailies such startling headlines as "The Cold Storage Warehouses Frozen Out," and "December Eggs at May Prices."

Briefly the idea is that, when the days begin to shorten and the nights to lengthen, the average hen cannot get food enough before going to roost to keep her digestive apparatus working up to the capacity it should work, to enable her to lay an egg every day; and, consequently, she takes a rest, perhaps of several weeks or perhaps several months; whereas she might lay as many eggs in December, or perhaps *almost* as many, as she does in May and June, if she simply had a shorter night and plenty of good nourishing food before going to her final roost. Therefore all you need to do is to light up the henhouse at 8 or 9 o'clock (or perhaps 9 or 10 by the new schedule) and give the poultry a good feed—enough to last them until morning. My neighbor Abbott down in Florida raises chickens by the thousands, and he declared some time ago that during the time of year when we have long nights the small chickens need a chance to take food in the night time; and he used a lamp brooder that not only gave out heat but gave out light enough so the chickens could feed whenever hungry. I believe the growers of Grand Rapids lettuce have found they get good merchantable lettuce quicker by the help of the electric light during long nights as above. Now, some of you may ask where the windmill comes in. Why, you want a windmill for lighting your home, barns, and outbuildings; and when you get it, it will be the cheapest mode of giving poultry a chance to feed in the night time.

The closing paragraph in the *Rural* puts in a caution about using eggs for hatching from hens that have been kept laying all winter under the stimulus of late suppers, as outlined above. Better have a separate pen for producing eggs in the good old-fashioned way without the after-dark suppers.

If I regard iniquity in my heart, the Lord will not hear me.—*PSALMS 66:18*.

On page 52 of our issue for January I suggested that the reason God did not hear and answer the prayers of the good people in our nation was because our nation year after year was consenting to receive revenue from this hellish traffic. The more I thought of it, and the more I prayed over it, my assurance grew greater that I was right about it. In Our Homes for this

issue I started out again and made the point very strong that the little text might apply to nations as well as to persons. Our readers will probably remember that Hobson has been urging the same thing. He said in substance that when the liquor traffic was stopped the war would stop and not before. Little did I dream, however, how soon my prediction and Hobson's would come to pass. On the 6th day of November my good friend, J. E. White, superintendent of the Anti-saloon League of Ohio, sent me a telegram which reads as follows:

Ohio dry by more than 15,000; legislature sure on ratification; nation will quickly follow. Praise the Lord for your vision.

J. A. WHITE.

Columbus, O., Nov. 6.

You will remember this was the day after election. Well, on that very same day, just a few hours later, I was startled by hearing the whistle on our factory blowing a long blast right in the midst of working hours, and it kept on blowing. When everybody rushed out inquiring "What is the racket?" the reply was that the war was at an end. You know how it was, my good friends, I presume, for I suppose most of you whose eyes rest on these pages had a similar experience. But this was by some means a premature report; and then I remembered claiming that Hobson and myself were exactly right in saying when the liquor business ended the world-wide war would end; but when I was told that it was a false report, and that the war did not end on the same day, I replied that only a few days more—possibly a few hours—would verify my prediction. Well, this morning, Nov. 11, when Mrs. Root and I were eating breakfast a little earlier than usual (because we expect to start for Florida tonight, Nov. 11) this same whistle started up a little before daylight, and soon the people were out again screaming and yelling and rejoicing; and this rejoicing and carousing has been going on at an unheard-of rate during the whole day. But, praise the Lord, this rejoicing is without the aid of either beer or whisky. Automobiles are running in every direction; flags of all sizes and nationalities are afloat, and I think it comes nearer to being a worldwide rejoicing than anything else, perhaps, our eyes have ever seen before. Business houses, factories, and everything else, are closed.

One of the first questions I asked was, "Has the whole world really stopped fighting? are implements of war actually dropped? is the whole world ready to beat its swords into plowshares and spears into pruning-hooks?"

Praise the Lord, Florida also voted dry the same day that Ohio did.

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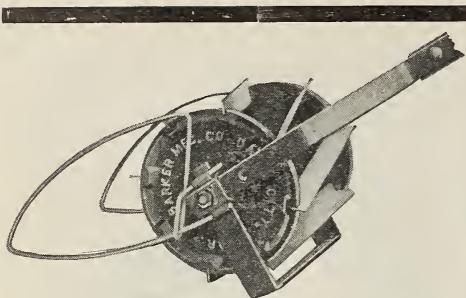
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AROUND THE OFFICE

M.A.O.

Well, I've been up agin it hard again this past month. It jest seems as if Old Man Trouble was a waitin for me with a b.g. club around every corner I turn and some places he's square in the middle of the road, straight ahead unavoidable and not hidin around no corner at all whatever but seemin to advance on me purposely. I'll give a example. The uncontrollable powers as what runs this universe as they please without consultin anybody at all seem fit this year to put the best three or four bass fishin days of the whole summer just betwixt the end of clover flow and the beginnin of buckwheat flow. I felt the moral promptins and surgins of duty to take off the partly filled supers of clover honey and extract em when it orter have been done, but I didn't yield to it. In a unguarded moment I yielded to the bass impulse about four or five days in succession, and when I got thru with this glorious time I hadn't no time for extractin nothin except regrets for not doin what I oughter have done when I oughter. I don't know what it is in my natur that has given me a predisposishun to hold onto a fish pole rather than the handle of a honey extractor. But it has just so. I can make for the creek down behind the woods on a good bass day like a steer goin thru the corn, but I allays seem dull and listless around a honey extractor. Well, you see I used my extractin days of grace all up without doin any extractin, and the bees went right ahead with the buckwheat harvest on schedool time. They don't have no bass temptations and they seem to think the principal thing in life is to break their fool necks workin. They don't know no better I spose, but it makes me pretty nigh hate 'em sometimes, for allays after yieldin to the promptins of fishin and gettin back to my apiary they seem to be accusin me of shortcomins along the work line. There they allays are with their coats off, so to speak, overworkin as I see it, and its a fact if I don't feel mean around em. I tell em they're fools right to their faces and that one hour of good fishin is worth six weeks frayin out your wings gatherin honey for somebody to steal from you and they jest keep on workin and I get to feelin meaner and meaner all the time. But I'm digressin. You can see that my extractin supers bein partly filled with clover honey, me a fishin, and the bees a bringin in buckwheat honey, had a pretty good chance of gettin filled up with mixed honey. Jest so. When I came to extract this month the resultin honey woant just exactly water white. Nor it woant coal black. It was both. When I tried to trade it for money to the Airline Honey crowd they stuck up their noses at it and tried to depprecate it. That didn't make me think any less of it tho. But they knew I had a partner in the honey producin bizness what I had promised faithful I would-

Around the Office—Continued

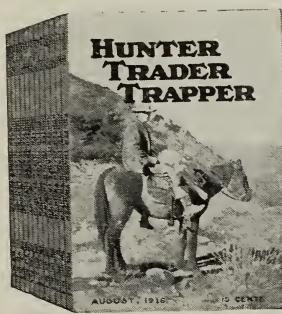
n't let the clover and buckwheat flows get mixed. He furnished all the capital invested and I was to furnish the experience, the industry and the faithful performance of duty at all times, whether the bass fishin was good or not I spose. So those Airline people had me where the squeezin was good and the hair was considerable short, and they proceeded exactly accordinly. They pointed out if I'd sell instantaneous, my partner needn't ever see the honey, and they said money didn't show dark color, even if the grand total was a little disappointin. That argament got me altho as how it oughtnter. It was jest a natteral going down hill morally, beginnin with fishin when I ought to have been extractin, and endin by sellin my partner's honey and my own mostly for the purpose of coverin up my fishin tracks. Then, bein as how the sideways is always all greased for the occasion when a feller begins to toboggan, somebody told my apriary partner almost all the truth in the case. What he told me woant all flatterin, and he was madder'n a mad dog. Then it sifted thru to my domestic quarters, and I had to fortify myself agin a new offensive from that direction. I can't tell anythin more about it now. It's too oppressin.

But was I to blame for the best fishin' weather comin' just when it did? I woant, for I don't control the weather. Then I

(Continued on page 762.)

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Around the Office—Continued

woant in no way to blame at all as I see it. I am a poor persecuted beekeeper, so I am, set on by the bees and by my apiary partner and by Airline and by my relations. Afore I close I want J. L. Byer specially to reflect on what I have just said. I want him to see the dangers in bein a fisherman and a beekeeper, for he's liable sometimes to be a fisherman when he ought to be a beekeeper and never a beekeeper when he ought to be a fisherman—never. If you expect to contiño beekeepin and your wife's trustin love and affection, Byer, I believe I'd give up fishin. I know I would. But I don't know as they're worth it, tho, so I don't.

* * *

Woant that a awful big puff Editor E. R. Root gave Iony Fowls in the last Gleanins? He didn't ask me anythin about it afore doin it. She is smart all right, and she knows a lot about beekeepin, but I am bound to let in more light on things around the office when I can, and this is jest where I can. She is disputatious somethin like Dr. Miller. That's some disputatious. There's been more fur, feathers, and some-

(Continued on next page)

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* Around the Office—Continued

times quiverin pieces of real human hide flyin thru the air hereabouts since she jined the Gleainings force than there ever was afore. You can't turn around and not find a apicultural argument in full blast and Iony Fowls a fannin of it likely enough. She aint afraid of nobody, includin me, Mel Pritchard and the automobile robbers between Medina and her home in Oberlin, 30 miles away. She shoots to kill in all departments—that's the kind she is. I kinder shudder as I think o her, and yet I kind o like her.

* * *

Louis Biediger of La Coste, Tex., seems to be a kind of a frank open sort of feller. I judge he's a true sufferin victim of thirst at times too for when he was a writin to the Roots the other day he ended up his letter by sayin: "I wish to Jerusalem that I could get some good wholesome beer. Where can I get it?" How much enlightenin informashun he got on this burnin question of the

(Continued on next page.)

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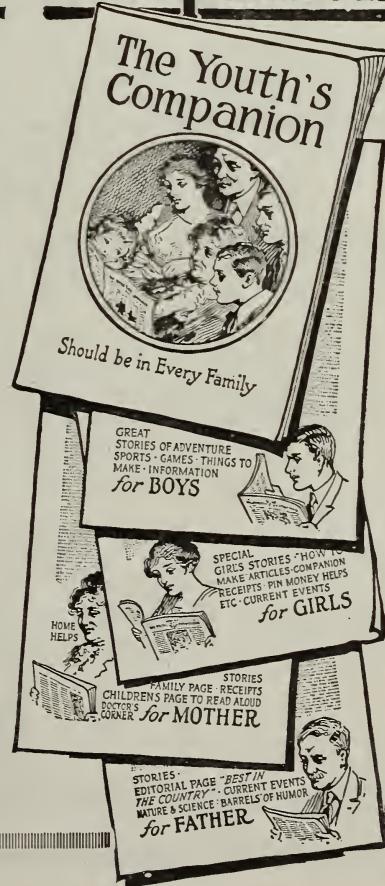
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The Youth's Companion



Around the Office—Continued

hour from Mr. A. I. Root or from Mr. E. R. Root I don't know. I aint sure he got any encouragement at all whatever. I only wish I had his nerve. I'd become a poison snake juggler and hunt lions in Afrika between times, or I'd lend it to some beekeeper to start a dispute with it with Dr. Miller on some beekeepin question. If it wasn't worn out by that time I'd match it up agin Doe Phillips's nerve.

* * *

Steven T. Byington of Ballard Vale, Mass., writes: "If M.-A.-O. finds the squash-borers and squash bugs worse this year than ever before, I commiserate him. In my locality the black squash bugs were worse winter-killed than the bees were, so that there has been hardly a bug all summer." All right, Mr. Byington, but it weren't no such condition here. They were thicker'n flees on a dog. If I'm goin to keep up this language reform next summer, I've got to move into a place where the squash bugs have been winter-killed jest as in Byington's country. I can't keep inside Root language rules with squash bugs around, I jest can't. I've got to talk to squash bugs as they deserve, and I never seen a Root that knows how to talk to a squash bug. Formerly I did, bi Sulphide.

* * *

Thanks, C. B. Palmer, General Merchandise also Dealer in Bees and Bee Supplies,
(Continued on next page.)

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Around the Office—Continued

Bradshaw, Nebr. It helps some, when a feller's carrots have all ben froze the way mine was, to have some one's compliments and wishes to the effect you wont die. You wait till you're suggested to every time you go to domestic headquarters that there woant no use of the carrots all bein froze if you hadn't a cared more for fishin than for your own happy home and fireside and people inhabitin the same. You'll be grateful for any suggestion from anywhere to the effect that anybody aint dissatisfied with you bein alive.

* * *

"Give poor M.-A.-O. a chance. He's reformed beyond all expectation. Don't muz-

(Continued on next page.)

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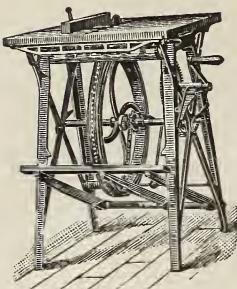
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Around the Office—Continued

zle him up too much, but let him inhale freely the fresh autumn air, and don't give him too much of the other 'A. I. R.',—Rev. Bede Mayemberger, Freeport, Minn.

Say, but that's refreshin, Rev. Mayemberger. When I move to Freeport I am goin to jine your church. I ain't yet above keepin company with the right kind of a preacher.

* * *

"Thanks to M.-A.-O. for the Editor's swimming picture. It's the next best thing to Mel Pritchard's picture."—Ralph Hall, Mountain View, Ark.

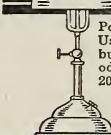
Mel, you ain't no friend of mine, and I don't care much what people say about you. But I wouldn't blame you if you got onto the train and went out to Mountain View, Ark., and came back with a homicidal record won in a altercation with Mr. Hall.

* * *

I know one set of dingbusted swarmin bees that I bet got their craws full of travelin for oncet and wished they had stayed home. Wesley Foster of Colorado was tellin about it here around the Roots' office not long ago when he was here. He said he was shippin bees one day last spring from his apiary in Colorado away up into Idaho about 900 miles. He was makin big packages of 'em by screenin the tops and bot-

(Continued on next page.)

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Around the Office—Continued

toms of 8-frame hives and everlastinly hustlin 'em aboard a box car. Just then a whoopin thru the air came a all-fired big swarm and clustered on a bush right near Wesley. "All aboard for Idaho," says he,

and dumped that fool swarm into a package afore they knew what had happened to 'em, and four days later they was trampin Wesley Foster's tread mill a thousand miles away in Idaho. I say them bees found it wasn't so awful smart to swarm as they thought it was.

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500	$4\frac{1}{4} \times 4\frac{1}{4} \times 1\frac{1}{4}$	plain, B,	500	$4\frac{1}{2} \times 4\frac{1}{2} \times 1\frac{3}{4}$	plain, A,
500	$4\frac{1}{4} \times 4\frac{1}{4} \times 1\frac{1}{8}$	4-beeway, A,	500	$4\frac{1}{2} \times 4\frac{1}{2} \times 1\frac{3}{4}$	2-beeway, A
500	$4\frac{1}{4} \times 4\frac{1}{4} \times 1\frac{1}{8}$	$\frac{1}{4}$ -split, A,	1500	$4\frac{1}{2} \times 4\frac{1}{2} \times 7$ -to-ft.	2-beeway, B,
3000	$4\frac{1}{4} \times 4\frac{1}{4} \times 1\frac{1}{8}$	grooved, A	500	$4\frac{1}{2} \times 4\frac{1}{2} \times 7$ -to-ft.	2-beeway, A,
500	$4\frac{1}{4} \times 4\frac{1}{4} \times 1\frac{1}{8}$	$\frac{3}{4}$ -split, A,	500	$4\frac{1}{2} \times 4\frac{1}{2} \times 1\frac{5}{8}$	2-beeway, A.

THE A. I. ROOT CO., MEDINA, OHIO

Queens BEES BY PARCEL POST Queens AND WE PAY THE POSTAGE

Will ship Italian Bees this year from our own yards. They are hustlers. A few pounds of Honey next year at 25 to 30c per pound will pay for your packages of bees. We shipped thousands of pounds last season.

We are booking orders now, one-fourth down, balance at shipping time. We are going to winter 1000 Young Tested Queens reared in October so can ship Tested Queens early as you want them.

One 1 pound package of bees.....	\$2.90	Select Untested Queens.....	\$1.50 each
One 2 pound package of bees.....	5.00	Tested Queens	2.50 each
One 3 pound package of bees.....	7.00	Select Tested	3.00 each

10 per cent discount on orders amounting to 25 packages or more. Add price of Queen wanted when ordering packages of bees. Breeders \$5.00 and \$10.00.

Send for Free Circular giving details. Reference: The Guaranty State Bank, Robstown, Texas, and The City National Bank, Corpus Christi, Texas.

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Your Duty—Do You Know It?

It is to get ready for the coming season and be ready for the first honey flow. This will net you profits. Prepare your bees for a big year and take no chances. Get the best to do with and have the best results.

Our Duty—Do We Know It?

We get the beekeepers ready for the big season. Supply them with the best of everything with which to work and get the best results. Send us a list of your requirements for quotation. TO DELAY MEANS LOSS TO YOU. "Falcon" service cannot be beat. Catalog and Simplified Beekeeping on request.

W. T. Falconer Manufacturing Company

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"where the best bee hives come from"

"Falcon"



The Spirit of the Red Cross Should Enter Every Home

THROUGH the Red Cross all the love of kindred and country, which gives our National soul its greatness, finds expression.

Those who love America, believe in humanity, and have faith in God, must count themselves proud to answer "present" at the Red Cross Christmas Roll Call, December 16th to 23rd, during which period the privilege of membership is to be extended to every loyal American.

Let us grasp this opportunity to make this a Red Cross Christmas.

Let us be able to tell our boys at the front, when we send them our Christmas greetings, that America stands solidly behind the Red Cross—their *Red Cross*—with full membership in every home.

Let us tell them that this beautiful spirit of love, and compassion, and generosity, and unselfish service, has entered every home in our land—from the smallest farm in Maine to the largest ranch in California.

No other message we can send will give them greater courage or encouragement. They know what the Red Cross means to them.

Join the Red Cross

All you need is a heart and a dollar

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